

Module Catalogue for the Subject

Biofabrication

as a Master's with 1 major with the degree "" (120 ECTS credits)

Examination regulations version: 2025 Responsible: Faculty of Chemistry and Pharmacy

JMU Würzburg • generated 14-Dez-2024 • exam. reg. data record 88|h78|-|-|H|2025



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The subject is divided into

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Learning Outcomes

German contents and learning outcome available but not translated yet.

Wissenschaftliche Befähigung

- Die Absolventinnen und Absolventen können ein breites und vertieftes interdisziplinäres Wissen aus den wichtigsten Disziplinen der Biofabrikation abrufen. Sie verstehen die mathematischen, chemischen und physikalischen Grundlagen der Biofabrikation sowohl theoretisch als auch praktisch und können diese selbständig anwenden. Sie besitzen Abstraktionsvermögen, analytisches Denken, Problemlösungskompetenz und die Fähigkeit, komplexe Zusammenhänge zu strukturieren. Die Grundlagen hierfür werden im ersten Semester in Vorlesungen und Übungen der Chemie und Medizin vermittelt und mittels Klausuren überprüft.
- Die Absolventinnen und Absolventen können selbständig Experimente durchführen, analysieren und die erhaltenen Ergebnisse darstellen und bewerten. Vermittelt werden diese Fähigkeiten im Rahmen der Projektarbeiten. Die Überprüfung der Zielerreichung findet durch die Erstellung einer Projektarbeit und deren Präsentation in englischer Sprache mit anschließender englischsprachiger Diskussion statt.
- Weiterhin sind die Absolventinnen und Absolventen in der Lage, sich mit Hilfe von Fachliteratur in neue komplexe interdisziplinäre Aufgabengebiete selbständig einzuarbeiten, naturwissenschaftliche Methoden selbständig auf konkrete experimentelle oder theoretische Aufgabenstellungen anzuwenden, Lösungswege zu entwickeln und die Ergebnisse zu interpretieren und zu bewerten. Auch diese Fähigkeiten werden im Rahmen Projektarbeiten sowie der Masterarbeit entwickelt und durch die anschließende Bewertung der Arbeit überprüft. Die Absolventinnen und Absolventen können darüber hinaus ihr Wissen und ihre Erkenntnisse einem Fachpublikum gegenüber darstellen und vertreten, was durch das Abschlusskolloquium zur Masterarbeit überprüft wird.

Befähigung zur Aufnahme einer Erwerbstätigkeit

- Die Absolventinnen und Absolventen können mit wissenschaftlichen Methoden auch unbekannte Probleme aus unterschiedlichen fachlichen Perspektiven analysieren und bearbeiten. Der interdisziplinäre Aufbau des Studiengangs, der Elemente aus medizinisch- und naturwissenschaftlichen Fachbereichen vereint und auch grundlegende mechatronische Fähigkeiten vermittelt, fördert von Beginn an interdisziplinäres Lernen, Denken und Verstehen. Dies wird durch den Besuch von Lehrveranstaltungen der Chemie und Medizin vermittelt und durch die erfolgreiche Absolvierung der Module bestätigt. Diese Problemlösungskompetenz können die Absolventinnen und Absolventen gewinnbringend in ihrer Berufspraxis einsetzen, so dass sie erfolgreich an der zukünftigen Weiterentwicklung von Biofabrikations- und 3D- Druck-Technologien teilhaben können.
- Die Absolventinnen und Absolventen sind darüber hinaus in der Lage, theoretisches Wissen in der Praxis anzuwenden. Der Praxisbezug ist durch die praxisnahe Forschung der Kooperationspartner gegeben, in deren Einrichtungen die Studierenden die Projektarbeiten anfertigen. Überprüft wird diese Fähigkeit durch Projektarbeiten und nicht zuletzt die Abschlussarbeit.
- Absolventinnen und Absolventen sind in der Lage, konstruktiv und zielorientiert in einem heterogenen Team zusammenzuarbeiten, unterschiedliche und abweichende Ansichten produktiv zur Zielerreichung zu nutzen und auftretende Konflikte zu lösen. Diese Teamfähigkeit und Konfliktkompetenz erlernen die Studierenden in der Zusammenarbeit in Arbeitskreisen während der Anfertigung der Projekt- und Abschlussarbeit in verschiedenen Ländern und Kulturen.

Persönlichkeitsentwicklung

• Die Absolventinnen und Absolventen können ihre erworbenen Kompetenzen in unterschiedlichen interkulturellen Kontexten anwenden. Dies üben sie im Rahmen der zwei halbjährigen Projektarbeiten, die im Ausland stattfinden. Im Rahmen des Auslandsaufenthaltes erlernen die Stu-

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	data record Master (120 ECTS) Biofabrikation - 2025	

dierenden ebenfalls sich in einem heterogenen Umfeld zu bewegen und abweichende Meinungen und Herangehensweise konstruktiv auf ein gemeinsames Ziel hin einzubinden. Die Absolventinnen und Absolventen verfügen demnach über eine ausgeprägte Toleranz und Kooperationsbereitschaft über kulturelle Grenzen hinweg. Ebenso verfügen sie über die Bereitschaft und Befähigung zum selbstständigen und selbstverantwortlichen Lernen und Arbeiten und damit über die Bereitschaft zum lebenslangen Lernen. Die Zielerreichung wird durch das erfolgreiche Bestehen der Projektarbeiten überprüft, die in einer fremden kulturellen Umgebung erstellt und in einer Fremdsprache verfasst wird.

Gesellschaftliches Engagement

• Die Absolventinnen und Absolventen können gesellschaftliche, naturwissenschaftliche, kulturelle wie auch wirtschaftliche Entwicklungen kritisch reflektieren und deren Auswirkungen auf die Wirtschaft, Gesellschaft und die Umwelt erfassen. Sowohl in Vorlesungen als auch im Rahmen der Projekt- und Abschlussarbeiten setzen sich die Studierenden mit aktuellen Forschungsthemen selbständig und kritisch auseinander und es werden Grundlagen der guten wissenschaftlichen Praxis, ethische Belange und wirtschaftliche Entwicklungen in dem Fachgebiet vermittelt. Hierzu gehört auch die Reflexion ethischer Folgen der eigenen Arbeit für Wirtschaft und Gesellschaft. Die Zielerreichung wird durch das erfolgreiche Bestehen der Projekt- und Abschlussarbeiten überprüft, in letzterer werden die genannten Themen diskutiert.

Abbreviations used

Course types: \mathbf{E} = field trip, \mathbf{K} = colloquium, \mathbf{O} = conversatorium, \mathbf{P} = placement/lab course, \mathbf{R} = project, \mathbf{S} = seminar, \mathbf{T} = tutorial, $\ddot{\mathbf{U}}$ = exercise, \mathbf{V} = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

??-???-2025 (2025-??)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.



Compulsory Courses

(80 ECTS credits)

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Biofabrication

Theoretical Basics of Biofabrication

(20 ECTS credits)

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Module	e title				Abbreviation
Polymers II 03-FU-PM2-222-m01			03-FU-PM2-222-m01		
Module coordinator Module offered by					
holder of the Chair of Functional Materials in Medicine and Chair of Chemical Technology of Material S Dentistry				echnology of Material Synthesis	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Basics racteriz		as advanced knowledge	about contemporary	issues of polymer s	ynthesis, -modification and cha-
Intend	ed learı	ning outcomes			
The stu	dent h	as advanced knowledge	of the synthesis, mod	lification and charac	terization of polymers.
Course	S (type, n	number of weekly contact hours, l	language — if other than Gei	rman)	
V (2) +	P (2)				
		eessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
c) talk Langua	(approx ige of a ment o	ation of one candidate e 30 minutes) ssessment: German and ffered: Once a year, wint bonus	/or English	s) or	
Allocat	ion of p	olaces			
			-		
Additio	nal inf	ormation			
			-		
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	urs in			
Master Master	's degro 's teach	ee (1 major) Functional M ee (1 major) Chemistry (2 ning degree Gymnasium 14 course MINT Teacher E	024) MINT Teacher Educat		ork Bavaria (ENB) (2025) B) (2025)

Master's with 1 major Biofabrication (2025)	
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Module title			Abbreviation		
Biofabrication				03-BIOFAB-252-m01	
Module coordinator				Module offered by	
holder Dentist		Chair of Functional Materi	ials in Medicine and	Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
and pra photon sinterir	actices, 1 polym 1g, mel	description of extracellu erisation, fused deposition	lar matrix, bioprintin on modelling, inorgan self-healing hydroge	g, continuous liquid nic powder printing, ls, polymers in 3D pl	of medical device regulations interface polymerisation, two- stereolithography, selective laser rinting, introduction to rheology, rol.
Intend	ed lear	ning outcomes			
ble in t printer ding of will acc	he con works, scient quire th	text of biofabrication. Thi with its strengths and we fic methodology for each	s includes how the pe eaknesses. A holistic stage and the differe	olymers are process view of biofabricatio ent regulations gover	3D printing) technologies availa- ed and how each class of 3D on is taught, with an understan- rning medical devices. Students ting industry and the resulting
		number of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) + Module		P (1) t in: V, Ü: German and/or	English		
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
b) oral c) talk	examir (appro>	mination (approx. 90 min ation of one candidate e k. 30 minutes) ssessment: German and,	ach (20 to 30 minute	s) or	
Allocat	ion of _l	olaces			
Additio	onal inf	ormation			
Workload					
150 h					
Teachi	ng cycl	е			
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module					
keinem	keinem Studiengang zugeordnet				

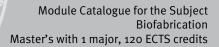
	e title				Abbreviation	
Physical Chemistry of Supramolecular Assemblies				08-PCM5-161-m01		
Module coordinator			Module offered by			
lectureı kularer		seminar "Physikalisch uren"	e Chemie Supramole-	-	l and Theoretical Cho	emistry
ECTS		od of grading	Only after succ. con	npl. of module(s)		
5		rical grade		•		
Duratio		Module level	Other prerequisites			
1 seme	ster	graduate				
Conten		Sidudic				
This mo cal prop	odule e perties	xamines the basic inte of aggregates as well a				ysical-chem
Intende	ed lear	ning outcomes				
in the fi dern ap Course :	ield. Th oplicati s (type, r	able to explain the basi ney can describe the for ons of supramolecular number of weekly contact hour	mation and physical-c chemistry.	hemical properties o		
S (2) + I Module	• •	t in: German or English				
Methoo module is	d of ass creditab	Sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
b) oral (c) talk (examir (appro>	mination (approx. 90 m nation of one candidate k. 30 minutes) ssessment: German an	each (approx. 20 mini	utes) or		
Allocat	ion of _l	olaces				
Additio	onal inf	ormation				
Additio 	onal inf	ormation				
Additio Worklo		ormation				
 Worklo		ormation				
	ad					
 Worklo 150 h	ad					
 Worklo 150 h Teachir	ad ng cycl	e	DDDS for teaching-degree progra	nmmes)		
 Worklo 150 h Teachir	ad ng cycl		ons for teaching-degree progra	nmmes)		
 Worklo 150 h Teachir Referre	ad ng cycl ed to in	e LPO I (examination regulation	ons for teaching-degree progra	ammes)		
 Worklo 150 h Teachir Referre Module	ad ng cycl ed to in e appea	e LPOI (examination regulation re		ammes)		
 Worklo 150 h Teachir Referre Module Master ¹	ad ng cycl ed to in e appea	e LPO I (examination regulation Irs in ee (1 major) Chemistry	(2016)	ammes)		
 Worklo 150 h Teachir Referre Module Master' Master	ad ng cycl ed to in e appea 's degr	e LPO I (examination regulations ITS in ee (1 major) Chemistry ee (1 major) Mathemati	(2016) cs (2016)			
 Worklo 150 h Teachir Referre Master' Master' Master'	ad ng cycl ed to in e appea 's degr 's degr 's degr	e LPOI (examination regulation Irs in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation	(2016) cs (2016) onal Mathematics (201			
 Worklo 150 h Teachir Referre Master' Master' Master' Master'	ad ng cycl ed to in 's degr 's degr 's degr 's degr	e LPOI (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computatio ee (1 major) Functional	(2016) cs (2016) onal Mathematics (201 Materials (2016)	6)	ork Bavaria (ENB) (20	016)
 Worklo 150 h Teachir Teachir Referre Module Master' Master' Master' Master' Master' Master'	ad ng cycl ed to in 's degr 's degr 's degr 's degr 's teacl	e LPOI (examination regulation Irs in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat	6) ion PLUS, Elite Netw		016)
 Worklo 150 h Teachir Referre Master' Master' Master' Master' Supple	ad ng cycl ed to in 's degr 's degr 's degr 's degr 's degr 's teacl menta	e LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation ee (1 major) Functional ning degree Gymnasium	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite	6) ion PLUS, Elite Netw		016)
 Worklo 150 h Teachir Referre Master' Master' Master' Master' Master' Supple Master'	ad ng cycl ed to in 's degr 's degr 's degr 's degr 's teacl mental 's degr	e LPOI (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation ee (1 major) Functional ning degree Gymnasium y course MINT Teacher	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite (2018)	6) ion PLUS, Elite Netw Network Bavaria (EN		016)
 Worklo 150 h Teachir Teachir Teachir Master' Master' Master' Master' Master' Supple Master'	ad ng cycl ed to in e appea 's degr 's degr 's teacl mental 's degr 's degr 's degr 's degr	e LPOI (examination regulation res in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computatione ee (1 major) Functional ning degree Gymnasium y course MINT Teacher ee (1 major) Chemistry	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite (2018) onal Mathematics (201 cs (2019)	6) ion PLUS, Elite Netw Network Bavaria (EN 9)	B) (2016)	

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Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's degree (1 major) Computational Mathematics (2022) Master's degree (1 major) Functional Materials (2022) Master's degree (1 major) Mathematics (2022) Master's degree (1 major) Chemistry (2024) Master's degree (1 major) Computational Mathematics (2024) Master's degree (1 major) Mathematics (2024) Master's degree (1 major) Mathematics (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title			Abbreviation		
Tissue cells meet materials					03-GEWMAT-222-m01
Module coordinator				Module offered by	
holder Medicir		Chair of Tissue Engineerir	ng and Regenerative	Chair of Chemical T	echnology of Material Synthesis
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster				
Conten	ts				
al tissu the use	es (tiss of suc based t	sue or also bioengineerin h models as alternative t ransplants, medical devi	g), the basics of cons est systems to anima	structing such model Il experimentation. A	I for the construction of artifici- ls using suitable (bio)materials, mother topic is the development basis for their approval (REACH,
Intende	ed learı	ning outcomes			
					topics in tissue engineering as hts in regenerative medicine.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) +	P (2)				
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
report o b) pres	on tech entatio	report / fieldwork report / nical course (approx. 10 n (approx. 30 minutes) o ssessment: German and,	pages) and r written examinatior		ractical course / project report / s)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module					
Master's degree (1 major) Functional Materials (2022)					





Pratical Biofabrication

(60 ECTS credits)

Module title Abbreviation					Abbreviation
BioFab Research-Thesis 1 08-BFFP1-152-m01					08-BFFP1-152-m01
Module coordinator Module offered by					
chairperson of examination committee Biofabrikation (Bio- fabrication)					try
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
30	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
thods i	n biofa		e expected to condu		synthesis and analytical me- ab independently, write a lab re-
Intende	ed lear	ning outcomes			
		able to use advanced syn . They are able to write a l			ication in the lab and to interpret I deliver a presentation.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
P (o)					
		sessment (type, scope, langua vle for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
		tical course (40 to 60 pag ssessment: German and		a. 20 to 30 minutes)	
Allocat	ion of p	places			
Additio	nal inf	ormation			
Worklo	ad				
900 h					
Teaching cycle					
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Master	Master's degree (1 major) Biofabrication (2015)				

Module title Abbreviation					Abbreviation
BioFab Research-Thesis 2 08-BFFP2-152-m01					08-BFFP2-152-m01
Module coordinator Module offered by					
chairperson of examination committee Biofabrikation (Bio- Chair of Biochemistry fabrication)					try
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
30	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
thods i	n biofa		e expected to condu		synthesis and analytical me- ab independently, write a lab re-
Intende	ed lear	ning outcomes			
		able to use advanced syn . They are able to write a l			ication in the lab and to interpret I deliver a presentation.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
P (o)					
		sessment (type, scope, langua vle for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
		tical course (40 to 60 pag ssessment: German and		a. 20 to 30 minutes)	
Allocat	ion of p	places			
Additio	onal inf	ormation			
Worklo	ad				
900 h	900 h				
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module					
Master	Master's degree (1 major) Biofabrication (2015)				

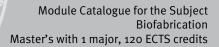


Compulsory Electives Theoretical Biofabrication

(10 ECTS credits)

Master's with 1 major Biofabrication (2025)	
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Theoretical Biofabrication

(10 ECTS credits)

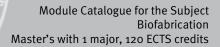
Module title					Abbreviation
Carrier	materi	ials and devices for thera	peutic compounds		03-SP3A1-152-m01
Module coordinator				Module offered by	
holder Dentist		Chair of Functional Mater	als in Medicine and	Faculty of Medicine	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts	·			
-		d binding of active agent rgeting and release of the		onalisation of particle	es for (intracellular) transport
Intend	ed lear	ning outcomes			
		e developed a knowledge of particles for (intracellu			agents in particles and of the fun- elease of active agents.
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) +	P (1)				
		s essment (type, scope, langua ole for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
(approx	x. 30 m	ractical course (approx. 1 inutes) ussessment: German and,		en examination (app	prox. 90 minutes) or presentation
Allocat			0		
Additio	onal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in			
Master	's degr	ee (1 major) Biofabricatio	n (2015)		

Modul	e title			Abbreviation	
Princip	Principles of Cell Biology and Tissue Regeneration				03-FU-Zell-152-m01
Modul	Module coordinator			Module offered by	1
holder	ofthe	Chair of Orthopaedics (Ja	kob/Ebert)	Faculty of Medicine	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts				
		of cell biology (cell structu oolism, stem cells, viruse			biosynthesis, signal transducti-
Intend	ed lear	ning outcomes			
Studer	nts acqu	uire fundamental knowled	dge in cell and molec	ular biology.	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)	
V (4)					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
b) oral c) oral d) log e) pres	examir examin (approx entatio	mination (approx. 90 to 1 nation of one candidate e ation in groups of up to 3 . 20 pages) or n (approx. 30 minutes) ssessment: German and,	ach (20 to 30 minute 3 candidates (approx	-	didate) or
Alloca	tion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
150 h	_				
Teachi	ng cycl	e			
-					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
	e appea				
	-	ree (1 major) Functional N			
Bache	ior deg	ree (1 major) Functional N	naterials (2021)		

Module	title				Abbreviation	
Supram	nolecul	ar Chemistry (Basics)			08-SCM1-161-m01	
Module coordinator				Module offered by		
lecturer of the seminar "Supramolecular Chemistry (Ba-			ar Chemistry (Ba-	Institute of Organic	Chemistry	
sics)"	Moth	od of grading	Only after succ. con	nl of module(s)		
		rical grade				
5 Duratio		Module level	Other prerequisites			
1 semes		graduate				
Conten		graduate	<u> </u>			
actions nation dern ap	betwe polyme policati	en molecules, molecular ers and networks, liquid c ons of supramolecular ch	recognition by recep rystals, self-assemb	tors, complexes, sur	lar chemistry. It focuses on inter- pramolecular polymers, coordi- , synthetic ion channels and mo-	
Intende	ed lear	ning outcomes				
field as describ	well a e the s	s to describe the formation	on, structure and poly in aqueous media a	ymers of coordinatio s well as to identify	igh degree of expertise in the n compounds. They are able to the characteristics of synthetic	
Courses	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)		
S (3) Module	taugh	t in: German or English				
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
b) oral e	examir	mination (approx. 90 min nation of one candidate e ssessment: German and,	ach (approx. 20 mini	utes)		
Allocati	-					
			,			
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ıg cycl	e				
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	immes)		
Module appears in						
Master's degree (1 major) Functional Materials (2016)						
Master's degree (1 major) Functional Materials (2022)						
	-	ee (1 major) Chemistry (2			orte Douaria (CND) (a a)	
		hing degree Gymnasium I ny course MINT Teacher F				
Supple	Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)					

Modul	e title				Abbreviation
Polym	er Mate	erials 1: Technology of Po	lymer Modification		08-FU-PW1-161-m01
Modul	e coord	inator		Module offered by	I
	progra Matrier	mme coordinator Funktic ials)	onswerkstoffe (Func-	Chair of Chemical T	echnology of Material Synthesis
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conter	nts				
logies	for the				; properties of polymers; techno- es for the characterisation of po-
Intend	ed lear	ning outcomes			
portan such a nufact	t produ s inject ured pr	ction technologies (polyr ion moulding) and under	mer synthesis method stand the different w	ds, compounding teo ays of influencing th	r with the characteristics of im- chnologies, processing methods e properties of materials and ma- < flow conditions in polymer pro-
Course	S (type, 1	number of weekly contact hours, I	anguage — if other than Ger	rman)	
V (2) +	P (2)				
		S essment (type, scope, langua ole for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
b) oral c) oral Langua Assess	examir examir age of a sment o	mination (approx. 90 mir nation of one candidate e nation in groups (groups o ssessment: German and offered: Once a year, wint for bonus	ach (approx. 20 minu of 2, approx. 30 minu /or English	-	
Allocat	tion of	places			
Additio	onal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Modul	e appea	ars in			
Master's degree (1 major) Functional Materials (2016) Master's degree (1 major) Functional Materials (2022)					





Thesis (30 ECTS credits)

Master's with 1 major Biofabrication (2025)	
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Module title					Abbreviation	
Master	Master-Thesis Biofabrication				08-MBF-MT-152-m01	
Module	coord	inator		Module offered by		
degree	progra	mme coordinator Chemie	e (Chemistry)	Chair of Biochemist	ry	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
25	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
		ives students the opport scientific methods they l			oroblem within a given time frame	
Intende	ed learr	ning outcomes				
		able to conduct research to present the results of t			the principles of good scientific	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
No cou	rses as	signed to module				
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
		(approx. 60 pages) ssessment: German and,	or English			
Allocat						
Additio	nal info	ormation				
Time to	compl	ete: 6 months.				
Worklo	ad					
750 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module	appea	in and a second s				
Master'	Master's degree (1 major) Biofabrication (2015)					

Module	title				Abbreviation
Final Co	olloqui	um			08-MBF-KOLL-152-m01
Module	Module coordinator			Module offered by	
Dean o	f Studi	es Funktionswerkstoffe (F	Functional Materials)	Chair of Biochemis	try
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Studen dience.		ver a presentation on the	findings of their Mas	ter's thesis and criti	cally discuss them with their au-
Intende	ed lear	ning outcomes			
Studen	ts are a	able to orally defend thei	r Master's thesis.		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
No cou	rses as	signed to module			
		Sessment (type, scope, langua Ile for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
tes)		ım (approx. 60 minutes): ssessment: German and,		utes) with subseque	nt discussion (approx. 30 minu-
Allocat	-				
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachi	ıg cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
		-	.		
Module	e appea	ars in			
Master	's degr	ee (1 major) Biofabricatio	n (2015)		

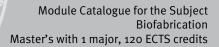


Compulsory Courses Practical Biofabrication Double Degree

(60 ECTS credits)

Master's with 1 major Biofabrication (2025)	JMU Würzburg • gener
	data record Mactor (1)





Pratical Biofabrication

(60 ECTS credits)

Module	e title				Abbreviation	
BioFab	BioFab Research-Thesis 1				08-BFFP1-152-m01	
Module coordinator				Module offered by		
chairpe fabrica		f examination committee	Biofabrikation (Bio-	Chair of Biochemis	try	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
30	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
thods i	n biofa		e expected to condu		synthesis and analytical me- ab independently, write a lab re-	
Intende	ed lear	ning outcomes				
		able to use advanced syn They are able to write a l			ication in the lab and to interpret I deliver a presentation.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
P (o)						
		Sessment (type, scope, langua vle for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
•	•	tical course (40 to 60 pages ssessment: German and		. 20 to 30 minutes)		
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
900 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module						
Master's degree (1 major) Biofabrication (2015)						

Module	Module title Abbreviation					
BioFab	Resea	rch-Thesis 2			08-BFFP2-152-m01	
Module coordinator				Module offered by		
chairpe fabrica		f examination committee	Biofabrikation (Bio-	Chair of Biochemist	try	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
30	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
thods i	n biofa		e expected to condu		synthesis and analytical me- ab independently, write a lab re-	
Intende	ed lear	ning outcomes				
		able to use advanced syn They are able to write a l			ication in the lab and to interpret I deliver a presentation.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
P (o)						
		sessment (type, scope, langua vle for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
		tical course (40 to 60 pag ssessment: German and		a. 20 to 30 minutes)		
Allocat	ion of p	places				
Additio	onal inf	ormation				
Worklo	ad					
900 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module						
Master's degree (1 major) Biofabrication (2015)						

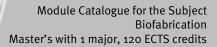


Compulsory Electives Theoretical Biofabrication Double Degree

(30 ECTS credits)

Master's with 1 major Biofabrication (2025)	JMU Würzburg • generated 14-Dez-2024 • exam. reg.	page 30 / 44
master s with I major biolabilitation (2025)	Jino wurzburg - generated 14-Dez-2024 - exam. reg.	page 30 / 44
	data record Master (120 ECTS) Biofabrikation - 2025	





Theoretical Biofabrication

(30 ECTS credits)

Module title Abbreviation					
Polymers II 03-FU-PM2-222-m01					
Module	e coord	inator		Module offered by	<u> </u>
holder Dentist		Chair of Functional Mater	ials in Medicine and	Chair of Chemical T	echnology of Material Synthesis
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Basics racteriz		as advanced knowledge	about contemporary	issues of polymer s	ynthesis, -modification and cha-
Intend	ed learr	ning outcomes			
The stu	dent ha	as advanced knowledge	of the synthesis, mod	lification and charac	terization of polymers.
Course	S (type, n	umber of weekly contact hours,	language — if other than Gei	rman)	
V (2) +	P (2)				
Metho	d of ass	essment (type, scope, langua	age — if other than German,	examination offered — if no	ot every semester, information on whether
module is	creditab	le for bonus)	-		
b) oral c) talk Langua	examin (approx ige of a ment o	mination (approx. 90 mir ation of one candidate e a 30 minutes) ssessment: German and ffered: Once a year, wint bonus	each (20 to 30 minute /or English	s) or	
Allocat	ion of p	olaces			
Additio	nal info	ormation	-		
Worklo	ad				
150 h					
Teachi	ng cycl	e	-		
			-		
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	irs in			
		ee (1 major) Functional N	laterials (2022)		
Master	's degre	ee (1 major) Chemistry (2	024)		
		ning degree Gymnasium ry course MINT Teacher E			ork Bavaria (ENB) (2025) B) (2025)

Module title					Abbreviation	
Biofabrication					03-BIOFAB-252-m01	
Module	e coord	inator		Module offered by		
holder Dentist		Chair of Functional Mater	ials in Medicine and	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
and pra photor sinterin	actices, 1 polym 1g, mel	, description of extracellu erisation, fused deposition	lar matrix, bioprintin on modelling, inorgai self-healing hydroge	g, continuous liquid nic powder printing, ls, polymers in 3D pi	of medical device regulations interface polymerisation, two- stereolithography, selective laser rinting, introduction to rheology, rol.	
Intend	ed lear	ning outcomes				
ble in t printer ding of will acc	he con works, scient quire th	text of biofabrication. Thi with its strengths and we fic methodology for each	s includes how the p eaknesses. A holistic stage and the differe	olymers are process view of biofabricatio ent regulations gover	3D printing) technologies availa- ed and how each class of 3D on is taught, with an understan- rning medical devices. Students ting industry and the resulting	
		number of weekly contact hours, l	anguage — if other than Ger	man)		
V (2) + Module		P (1) t in: V, Ü: German and/or	English			
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
b) oral c) talk	examir (appro>	mination (approx. 90 min nation of one candidate e k. 30 minutes) ssessment: German and,	ach (20 to 30 minute	s) or		
Allocat	ion of j	olaces				
Additio	onal inf	ormation				
	-					
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module						
keinem	keinem Studiengang zugeordnet					

	e title				Abbreviation	
Physical Chemistry of Supramolecular Assemblies					08-PCM5-161-m01	
Module coordinator				Module offered by		
lecturer of the seminar "Physikalische Chemie Supramole- kularer Strukturen"					l and Theoretical Ch	emistry
ECTS	1	od of grading	Only after succ. con	npl. of module(s)		
5		rical grade				
 Duratio		Module level	Other prerequisites			
1 seme		graduate		•		
Conten		glauuale				
This mo cal pro	odule e perties	xamines the basic inte of aggregates as well a				ysical-chem
Intend	ed lear	ning outcomes				
in the f dern ap Course	ield. Th oplicati s (type, r	able to explain the basi ey can describe the for ons of supramolecular umber of weekly contact hour	mation and physical-c chemistry.	hemical properties o		
S (2) + Module	• •	t in: German or English				
Metho	d of ass	sessment (type, scope, lang le for bonus)	1	examination offered — if no	t every semester, informati	ion on whether
c) talk	(approx age of a	ation of one candidate a. 30 minutes) ssessment: German an blaces				
 Additic	nal inf	ormation				
Auuitio	matim					
Worklo	oad					
 Worklo	ad					
150 h		A				
		e				
150 h Teachi i 	ng cycl					
150 h Teachi i 	ng cycl	e LPO I (examination regulation	ons for teaching-degree progra	ammes)		
150 h Teachin Referre	ng cycl ed to in	LPOI (examination regulation	ons for teaching-degree progra	ammes)		
150 h Teachin Referre Module	ng cycl ed to in e appea	LPO I (examination regulation reg		ammes)		
150 h Teachin Referre Module Master	ng cycl ed to in e appea	LPOI (examination regulation Irs in ee (1 major) Chemistry	(2016)	ammes)		
150 h Teachin Referre Module Master Master	ng cycl ed to in e appea 's degr	LPO I (examination regulation Irs in ee (1 major) Chemistry ee (1 major) Mathemati	(2016) cs (2016)			
150 h Teachin Referre Module Master Master Master	ng cycl ed to in e appea 's degr 's degr 's degr	LPO I (examination regulation ITS in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation	(2016) cs (2016) onal Mathematics (201			
150 h Teachin Referre Module Master Master Master Master Master	ng cycl ed to in e appea 's degr 's degr 's degr	LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation ee (1 major) Functional	(2016) cs (2016) onal Mathematics (201 Materials (2016)	.6)	ork Bayaria (FNR) (or	016)
150 h Teachin Referre Module Master Master Master Master Master	ng cycl ed to in e appea 's degr 's degr 's degr 's teacl	LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathematic ee (1 major) Computation ee (1 major) Functional hing degree Gymnasium	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat	.6) ion PLUS, Elite Netwo		016)
150 h Teachin Referre Master Master Master Master Supple	ng cycl ed to in e appea 's degr 's degr 's degr 's degr 's teacl ementa	LPO I (examination regulation irs in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation ee (1 major) Functional ning degree Gymnasium y course MINT Teacher	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite	.6) ion PLUS, Elite Netwo		016)
150 h Teachin Referre Master Master Master Master Master Supple Master	ng cycl ed to in e appea d's degr d's degr d's degr d's degr d's teacl ementan d's degr	LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation ee (1 major) Functional hing degree Gymnasium y course MINT Teacher ee (1 major) Chemistry	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite (2018)	16) ion PLUS, Elite Netwo Network Bavaria (EN		016)
150 h Teachin Referre Master Master Master Master Supple Master Master Master	ng cycl ed to in e appea 's degr 's degr 's teacl ementau 's degr 's degr	LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathematic ee (1 major) Computation ee (1 major) Functional hing degree Gymnasium y course MINT Teacher ee (1 major) Chemistry ee (1 major) Computation	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite (2018) onal Mathematics (201	16) ion PLUS, Elite Netwo Network Bavaria (EN		016)
150 h Teachin Referre Module Master Master Master Master Supple Master Master Master Master Master	ng cycl ed to in e appea 's degr 's degr 's teacl emental 's degr 's degr 's degr	LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathemati ee (1 major) Computation ee (1 major) Functional hing degree Gymnasium y course MINT Teacher ee (1 major) Chemistry	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite (2018) onal Mathematics (201 cs (2019)	16) tion PLUS, Elite Netwo Network Bavaria (EN 19)	B) (2016)	
150 h Teachin Referre Module Master Master Master Master Supple Master	ng cycl ed to in e appea 's degr 's degr 's teacl emental 's degr 's degr 's degr 's degr 's degr	LPO I (examination regulation ars in ee (1 major) Chemistry ee (1 major) Mathematic ee (1 major) Functional hing degree Gymnasium y course MINT Teacher ee (1 major) Chemistry ee (1 major) Computation ee (1 major) Computation ee (1 major) Mathematic	(2016) cs (2016) onal Mathematics (201 Materials (2016) n MINT Teacher Educat Education PLUS, Elite (2018) onal Mathematics (201 cs (2019) n MINT Teacher Educat	16) tion PLUS, Elite Netwo Network Bavaria (EN 19)	B) (2016) ork Bavaria (ENB) (20	

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's degree (1 major) Computational Mathematics (2022) Master's degree (1 major) Functional Materials (2022) Master's degree (1 major) Mathematics (2022) Master's degree (1 major) Chemistry (2024) Master's degree (1 major) Computational Mathematics (2024) Master's degree (1 major) Mathematics (2024) Master's degree (1 major) Mathematics (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module title					Abbreviation		
Tissue cells meet materials					03-GEWMAT-222-m01		
Module	coord	inator		Module offered by			
holder Medicir		Chair of Tissue Engineerir	ng and Regenerative	Chair of Chemical T	echnology of Material Synthesis		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
5	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster						
Conten	ts						
al tissu the use	es (tiss of suc based t	ue or also bioengineerin h models as alternative t ransplants, medical devi	g), the basics of cons est systems to anima	structing such model al experimentation. A	I for the construction of artifici- ls using suitable (bio)materials, mother topic is the development basis for their approval (REACH,		
Intende	ed learr	ning outcomes					
					topics in tissue engineering as hts in regenerative medicine.		
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	rman)			
V (2) +	P (2)						
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether		
report o b) prese	on tech entatio	eport / fieldwork report / nical course (approx. 10 n (approx. 30 minutes) o ssessment: German and,	pages) and r written examinatior		ractical course / project report / s)		
Allocat	ion of p	olaces					
Additio	nal info	ormation					
Worklo	ad						
150 h	150 h						
Teaching cycle							
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)			
Module							
Master's degree (1 major) Functional Materials (2022)							

Module title Abbreviation							
Carrier materials and devices for therapeutic compounds 03-SP3A1-152-m01							
Module	e coord	inator		Module offered by			
holder Dentist		Chair of Functional Materi	als in Medicine and	Faculty of Medicine			
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
5	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	Its						
-		d binding of active agent rgeting and release of the		nalisation of particle	es for (intracellular) transport		
Intend	ed lear	ning outcomes					
		e developed a knowledge of particles for (intracellu			agents in particles and of the fun- elease of active agents.		
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Ger	man)			
V (2) +	P (1)						
		s essment (type, scope, langua ole for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether		
(approx	x. 30 m	ractical course (approx. 1 inutes) ussessment: German and,		en examination (app	prox. 90 minutes) or presentation		
Allocat							
Additio	onal inf	ormation					
Worklo	ad						
150 h							
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)			
Module	Module appears in						
Master	's degr	ee (1 major) Biofabricatio	n (2015)				

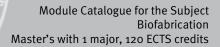
Module title					Abbreviation		
Supramolecular Chemistry (Basics)					08-SCM1-161-m01		
Module coordinator				Module offered by			
		seminar "Supramolecula	ar Chemistry (Ba-	Institute of Organic	Chemistry		
sics)"		•			,		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
5	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	ts						
actions nation	s betwe polyme	en molecules, molecular	recognition by receptrystals, self-assemb	tors, complexes, sup	lar chemistry. It focuses on inter- pramolecular polymers, coordi- , synthetic ion channels and mo-		
Intende	ed lear	ning outcomes	r				
field as describ ion cha	s well a be the s annels.	s to describe the formation	on, structure and poly s in aqueous media a applications of supra	ymers of coordinatio is well as to identify molecular chemistry	igh degree of expertise in the n compounds. They are able to the characteristics of synthetic		
S (3) Module	e taugh	t in: German or English					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether		
b) oral	examir	mination (approx. 90 min nation of one candidate e .ssessment: German and,	ach (approx. 20 mini	utes)			
Allocat	ion of _l	places					
Additio	onal inf	ormation					
Worklo	ad						
150 h	-						
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)			
Module appears in							
Master's degree (1 major) Functional Materials (2016) Master's degree (1 major) Functional Materials (2022) Master's degree (1 major) Chemistry (2024)							
Master	Master's degree (1 major) Chemistry (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)						

Modul	Module title Abbreviation					
Princip	Principles of Cell Biology and Tissue Regeneration 03-FU-Zell-152-mo1					
Modul						
holder	of the (Chair of Orthopaedics (Ja	kob/Ebert)	Faculty of Medicine	2	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
		of cell biology (cell structu oolism, stem cells, viruse			biosynthesis, signal transducti-	
Intend	ed lear	ning outcomes				
Studer	nts acqu	uire fundamental knowle	dge in cell and molec	ular biology.		
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4)						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
c) oral d) log (e) pres	examin (approx sentatio	ation of one candidate e ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German and	3 candidates (approx	-	didate) or	
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	e appea	ars in				
	-	ree (1 major) Functional N				
Bachel	lor' deg	ree (1 major) Functional N	Materials (2021)			

Modul	e title				Abbreviation		
Polymer Materials 1: Technology of Polymer Modificationo8-FU-PW1-161-m					08-FU-PW1-161-m01		
Modul	e coord	linator		Module offered by	<u> </u>		
	e progra Matrier	umme coordinator Funktic ials)	onswerkstoffe (Func-	Chair of Chemical T	echnology of Material Synthesis		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
5	nume	rical grade					
Durati	on	Module level	Other prerequisites				
1 seme	ester	graduate					
Conter	nts						
logies	for the				; properties of polymers; techno- res for the characterisation of po-		
Intend	ed lear	ning outcomes					
portan such a nufact	it produ is inject ured pr	ction technologies (polyr ion moulding) and under	mer synthesis method stand the different w	ds, compounding teo ays of influencing th	r with the characteristics of im- chnologies, processing methods le properties of materials and ma x flow conditions in polymer pro-		
Course	es (type,	number of weekly contact hours, I	language — if other than Ger	rman)			
V (2) +	P (2)						
		s essment (type, scope, langua ble for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
b) oral c) oral Langua Assess	examin examir age of a sment o	mination (approx. 90 mir nation of one candidate e nation in groups (groups o issessment: German and offered: Once a year, wint for bonus	each (approx. 20 minu of 2, approx. 30 minu /or English				
Alloca	tion of	places					
Additi	onal inf	ormation					
Worklo	oad						
150 h							
Teaching cycle							
Referr	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in							
	Master's degree (1 major) Functional Materials (2016) Master's degree (1 major) Functional Materials (2022)						

Module title Abbreviation						
Courses at the partner university (BioFab Master) 08-VPU-BF-152-mo1						
Module coordinator Module offered by						
prograi	mme co	pordinator of the exchang	ge programme	Faculty of Chemist	y and Pharmacy	
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)		
30	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate	Please consult with	course advisory ser	vice in advance.	
Conten	ts		•	· · · · · ·		
This m	odule o	liscusses topics from the	curriculum of the par	rtner university abro	ad.	
		ning outcomes	· · · ·	· · ·		
			ge and skills taught i	n the courses attend	ded by them at the partner univer-	
Course	S (type, 1	number of weekly contact hours,	language — if other than Ger	man)		
No cou	rses as	signed to module				
		s essment (type, scope, langua ole for bonus)	age — if other than German, o	examination offered — if n	ot every semester, information on whether	
		as specified by partner u ssessment: German and		at partner university	/ abroad	
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
900 h						
Teachi	ng cvcl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biofabrication (2015)						





Thesis (30 ECTS credits)

Module title					Abbreviation		
Master-Thesis Biofabrication					08-MBF-MT-152-m01		
Module	coord	inator		Module offered by			
degree	progra	mme coordinator Chemie	e (Chemistry)	Chair of Biochemist	ry		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
25	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	ts						
		ives students the opport scientific methods they l			oroblem within a given time frame		
Intende	ed learr	ning outcomes					
		able to conduct research to present the results of t			the principles of good scientific		
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)			
No cou	rses as	signed to module					
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether		
		(approx. 60 pages) ssessment: German and,	or English				
Allocat							
Additio	nal info	ormation					
Time to	compl	ete: 6 months.					
Worklo	ad						
750 h							
Teachir	ng cycl	e					
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)			
Module	appea	in and a second s					
Master'	Master's degree (1 major) Biofabrication (2015)						

Module title Abbreviation						
Final Colloquium 08-MBF-KOLL-152-m01						
Module coordinator Module offered by						
Dean o	f Studi	es Funktionswerkstoffe (F	Functional Materials)	Chair of Biochemis	try	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Studen dience.		ver a presentation on the	findings of their Mas	ter's thesis and criti	cally discuss them with their au-	
Intende	ed lear	ning outcomes				
Studen	ts are a	able to orally defend thei	r Master's thesis.			
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
No cou	rses as	signed to module				
		Sessment (type, scope, langua ole for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
tes)		um (approx. 60 minutes): ssessment: German and,		utes) with subseque	ent discussion (approx. 30 minu-	
Allocat	-					
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ıg cycl	e				
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)		
		-	.			
Module	e appea	ars in				
Master	's degr	ee (1 major) Biofabricatio	n (2015)			