



UNIVERSITÄT  
BAYREUTH



FAKULTÄT FÜR  
INGENIEURWISSENSCHAFTEN

Study plan of the Master of Science study programme

## **Biofabrication**

Engineering Science Faculty

at the Universität Bayreuth

Version 09.07.2019

## General Part

Abbr.	Course	1. Semester				2. Semester				3. Semester				4. Semester				Σ		
		CH			CP	CH			CP	CH			CP	CH			CP	CH	CP	
		L	T	P		L	T	P		L	T	P		L	T	P				
	<b>Material and Natural Science</b>																			
BF	Module Biofabrication																	4	5	
BF	Biofabrication	2	2		5													4	5	
CB	Module Cell Biology																	4	5	
CB	Fundamentals of Cell Biology	2		2	5													4	5	
FTE	Module Fundamentals of Tissue Engineering and Quality Management																	4	5	
FTE1	Fundamentals of Tissue Engineering	2		1	3													3	3	
FTE2	Quality Management	1			2													1	2	
SAB	Module Self-Assembling Biopolymers																	4	5	
SAB	Self-Assembling Biopolymers	2	2		5													4	5	
KMNS	Material and Natural Science – Competence Enhancement Core Elective Module Area																	x	5	
KMNS	Elective course, see selection catalogue <sup>1)</sup>		x		5													x	5	
	<b>Engineering Science</b>																			
BMA	Module Biomaterials																	4	5	
BMA	Biomaterials					2	2		5										4	5
CAE	Module Computer Aided Engineering																	4	5	
CAE1	Optimization					2			3									2	3	
CAE2	FE Seminar						2		2									2	2	
CPC	Module Chemistry and Polymer Chemistry																	4	5	
CPC	Introduction to Organic and Polymer Chemistry					2	2		5										4	5
PPM	Module Processing of Polymeric Materials																	4	5	
PPM1	Aspects in Processing of Polymeric Materials					2	1		4									3	4	
PPM2	Processing of Polymeric Materials Practical Course							1	1									1	1	
KES	Engineering Science – Competence Enhancement Core Elective Module Area																	x	5	
KES	Elective course, see selection catalogue <sup>2)</sup>						x		5									x	5	
	<b>Transferable Skills</b>																			
SF	Module Scientific Working																	5	5	
SF1	Ethics in Science					1			1									1	1	
SF2	Reception of Scientific Literature		1		1													1	1	
SF3	How to Write a Paper					3			3									3	3	
MMT	Module Management Training and Entrepreneurship																	x	6	
MMT1	Elective course, see selection catalogue <sup>3)</sup>		x		3													x	3	
MMT2	Elective course, see selection catalogue <sup>3)</sup>						x		2									x	2	
MMT3	Entrepreneurship		x		1													x	1	
	<b>Master's Thesis</b>																			
MT	Module Master's Thesis																	x	30	
MT	Master's Thesis														x	30		x	30	
	<b>Subtotal</b>		x		30		x		31					x	30		x	91		

## Advanced Studies

Abbr.	Course	1. Semester				2. Semester				3. Semester				4. Semester				$\Sigma$	
		CH			CP	CH			CP	CH			CP	CH			CP	CH	CP
		L	T	P	CP	L	T	P	CP	L	T	P	CP	L	T	P	CP	CH	CP
SA	Module Summer Academy																	x	5
SA	Summer School Polymer Science & Biofabrication									x			5					x	5
AM <sup>4)</sup>	Advanced Module																	x	24
AM1	Elective course, see selection catalogue <sup>5)</sup>									x			8					x	8
AM2	Elective course, see selection catalogue <sup>5)</sup>									x			8					x	8
AM3	Elective course, see selection catalogue <sup>5)</sup>									x			8					x	8
IAM <sup>4)</sup>	International Advanced Module																	x	24
IAM	Elective course, see selection catalogue <sup>6)</sup>									x			24					x	24
<b>Subtotal Advanced Studies</b>										x			29					x	29
<b>Sum (General Part + Advanced Studies)</b>		x			29	x			31	x			29	x			30	x	120

„Material and Natural Science – Competence Enhancement“ catalogue of core elective modules, WS

Abbr.	Course	1. Semester				2. Semester				3. Semester				4. Semester				Σ	
		CH			CP	CH			CP	CH			CP	CH			CP	CH	CP
		L	T	P		L	T	P		L	T	P		L	T	P			
WAP	Advanced Polymers core elective module																	4	5
WAP	Polymer Synthesis	2	2		5													4	5
WCM	Carrier Materials and Devices core elective module																	4	5
WCM	Drug Chemistry	2		2	5													4	5
WPC	Physical Chemistry core elective module																	4	5
WPC	Physical Chemistry of Polymers	2	2		5													4	5
WPM	Polymer Materials core elective module																	4	5
WPM1	Polymer Materials: Technology of Polymer Modification	2			3													2	3
WPM2	Technology of Polymer Modification Practical Course			2	2													2	2

„Engineering Science – Competence Enhancement“ catalogue of core elective modules, SS

Abbr.	Course	1. Semester				2. Semester				3. Semester				4. Semester				Σ	
		CH			CP	CH			CP	CH			CP	CH			CP	CH	CP
		L	T	P		L	T	P		L	T	P		L	T	P			
WBE	Bioprocess Engineering core elective module																	4	5
WBE	Bioprocess Engineering					2	2		5									4	5
WBI	Biotechnology core elective module																	4	5
WBI	Biotechnology					2		2	5									4	5
WBT	Bioengineering for Tissue Regeneration core elective module																	4	5
WBT	Bioengineering for Tissue Regeneration					2	2		5									4	5
WLA	Labcourse Automation core elective module																	x	5
WLA1	Automation Practical Course							1	1									1	1
WLA2	Study Project Automation					x			4									x	4
WSM	Simulation of Materials core elective module																	4	5
WSM	Simulation of Materials					2	2		5									4	5

<sup>1)</sup> One module of the respective catalogue "Material and Natural Science – Competence Enhancement core elective modules" has to be selected.

<sup>2)</sup> One module of the respective catalogue "Engineering Science – Competence Enhancement core elective modules" has to be selected.

<sup>3)</sup> Courses from a regularly updated catalogue have to be selected. These courses originate not from engineering science/materials science area, and are provided proof by marked major course assessment, or by „passed“. The denoted distribution of credit points is exemplary and may be subject to change due to individually selected courses.

<sup>4)</sup> Either the elective module AM or IAM has to be selected.

<sup>5)</sup> AMx courses can be taken at participating chairs/prof. in the study programme (University of Bayreuth, and national partner universities / institutions according to a regularly updated list.

<sup>6)</sup> The IAM module can be taken at participating profs./groups of international partner universities / institutions according to a regularly updated list.