

Lp.	subjects 2017/2018	total hours	ECTS	L	Ex	Lab	CL	P	S
				W	C	L	K	P	S
semester I									
	Selectable complementary courses	270	26	120	60		60		30
	Polish social and cultural customs	30	4	15					15
semester II									
	Polish and european legislation in environmental protection	15	1	15					
	Engineering information and data analytics	15	1						15
	Innovative research directions in organic chemistry	30	2	30					
	Innovative and cleaner inorganic technologies	45	3	30					15
	Selected subjects in physical chemistry	50	5	30 E			10		10
	Biofuels and bioresources	45	4	15 E		30			
	Functional nanomaterials	30	2	15					15
	Basic of Applied Photochemistry I	15	1	15					
	Heterogeneous catalysis	30	3	15 E					15
	Selectable courses	120	8	30	30			30	30
semester III									
	Chemical reactors engineering	30	3	15 E	15				
	Molecular modeling in catalysis and chemical technology	30	2	15	15				
	Chromatographic separation of phytochemicals	30	2			30			
	Phytochemical analysis	15	1	15					
	Calculational methods in chemical engineering	30	2	15			15		
	Technology of novel polymeric materials	30	2	15		15			
	Cleaner production and innovations in phosphorus compounds industry	30	2			15			15
	Modern materials for medicine	45	3	15		30			
	Cosmetic Emulsions – Troubleshooting of products quality and stability	45	3	15		30			
	Selectable courses	120	8	30		30			60
	Diploma seminar	15	2						15
semester IV									
	Computer modeling in chemical technology	30	6				30		
	Selectable courses	30	2						30
	Diploma seminar	15	2						15
	Master's thesis	10	20			10			

Selectable courses:	Selectable open on-line course
Innovative methods in Polymer Chemistry	PK Nanomaterials for optoelectronic and biological applications
Basic of Applied Photochemistry II	PK Chemistry of modern polymeric materials
Experimental methods in catalysis and surface characterization	FH-MS Chemical Nanosciences
Electrocatalysis	FH-MS Interactive Physical Chemistry
Delivery Systems for Personal Care	FH-MS Practical Analytics of Materials
Molecular modeling in drug design	FH-MS Generalized Curriculum in Chemical Process Design
Business strategies for scientists	ENSCL Degradation of materials
Innovations in the technology of drugs	ENSCL Metallic Alloys
Circular Economy In Technology and Waste Utylisation	ENSCL Numerical simulation
Technology Of Glass	ENSCL Bioenergy & Biofuels
Modern Technologies In Wastewater And Water Treatment	ENSCL Chemistry of Biomass
New Generation Of Composite Materials	IPB Equilibrium Thermodynamics
Coating Materials In Construction Chemicals	IPB Microencapsulation techniques and applications
Recycling of plastics	IPB Bioenergy Technologies
Selected methods of testing chemicals	IPB Adsorption Separation Processes: from lab to production scale
Elements of physical chemistry of polymers	PK = Politechnika Krakowska
Microwave-assisted organic synthesis	FH-MS = Fachhochschule Münster
Polymers in medicine and pharmacy	ENSCL = Ecole Nationale Supérieure De Chimie De Lille
Bionanomaterials	IPB = Instituto Politécnico de Bragança
Drug Delivery Systems	
Physicochemistry of aero- and hydrogels	
Basic ChemCAD simulations	
Concept of biorefinery and platform chemicals	

Detailed information at <http://www.chemia.pk.edu.pl/innovative-chemical-technologies-ict-m-sc-studies-programme/>