Cracow University of Technology

Faculty of Chemical Engineering and Technology

Chemical Technology Innovative Chemical Technologies (Innowacyjne Technologie Chemiczne)

M.Sc. Programme

Lp.	subjects 2017/2018	total hours	ECTS	L W	Ex C	Lab L	CL K	P P	S 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:

Innovative methods in Polymer Chemistry
Basic of Applied Photochemistry II
Experimental methods in catalysis and surface characterization
Electrocatalysis
Delivery Systems for Personal Care
Molecular modeling in drug design
Business strategies for scientists
Innovations in the technology of drugs
Circular Economy In Technology and Waste Utylisation
Technology Of Glass
Modern Technologies In Wastewater And Water Treatment
New Generation Of Composite Materials
Coating Materials In Construction Chemicals
Recycling of plastics
Selected methods of testing chemicals
Elements of physical chemistry of polymers
Microwave-assisted organic synthesis
Polymers in medicine and pharmacy
Bionanomaterials
Drug Delivery Systems
Physicochemistry of aero- and hydrogels
Basic ChemCAD simulations
Concept of biorefinery and platform chemicals

Selectable open on-line course

PK Nanomaterials for optoelectronic and biological applications
PK Chemistry of modern polymeric materials
FH-MS Chemical Nanosciences
FH-MS Interactive Physical Chemistry
FH-MS Practical Analytics of Materials
FH-MS Generalized Curriculum in Chemical Process Design
ENSCL Degradation of materials
ENSCL Metallic Alloys
ENSCL Numerical simulation
ENSCL Bioenergy &Biofuels
ENSCL Chemistry of Biomass
IPB Equilibrium Thermodynamics
IPB Microencapsulation techniques and applications
IPB Bioenergy Technologies
IPB Adsorption Separation Processes: from lab to production scale

PK = Politechnika Krakowska
FH-MS = Fachhochschule Münster
ENSCL = Ecole Nationale Superieure De Chimie De Lille
IPB = Instituto Politécnico de Bragança

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