

Study Plan Guide - BSc. in Pharmaceutical & Chemical Engineering – Dual Study Track

First Year					
First Semester Courses (19 CH)		Second Semester Courses (19 CH)			Summer Semester Courses (5 CH)
GERL101B1 German I B1 -Track (3CH)	GERL102B1	German II (3CH)	B1-Track	PCE2101-DS Analytical Chemistry (2CH)	DS101 Dual Studies Practical I (3CH)
	GERL102B2		B2-Track		
ENGL1001 Upper-Intermediate English (3CH)	ENGL1002 Advanced English (3CH)				
MATH101 Calculus I (3CH)	MATH102 Calculus II (3CH)				
PHYS103 Physics I (3CH)	PHYS104 Physics II (3CH)				
CHEM103 General Chemistry (3CH)	PHYS106 General Physics Lab (1CH)				
CHEM106 General Chemistry Lab (1CH)	CS116 Computing Fundamental (3CH)				
ARB100 Arabic (3CH)	CS1160 Computing Fundamental lab (1CH)				
	IE0141 Engineering Workshop (1CH)				
	PCE211 Introduction to Pharmaceutical and Chemical Engineering (1CH)				

Second Year						
First Semester Courses (13 CH)		Second Semester Courses (16CH)			Summer Semester Courses (6 CH)	
GERL201B1	German III (3CH)	B1-Track	GERL202B1	German IV (3CH)	B1-Track	PCE332-DS Chemical Engineering Economics (3CH)
GERL201B2		B2-Track	GERL202B2			
PCE281 Analytical Chemistry Lab (1CH)	PCE2201 Organic Chemistry For PCE (3CH)			DS201 Dual Studies Practical II (3CH)		
PCE221 Thermodynamics for Pharmaceutical and Chemical Engineering (3CH)	PCE2202 Organic Chemistry Lab for PCE (1CH)					
MATH203 Applied Mathematics for Engineers (3CH)	PCE212 Principles of Chemical Engineering (3CH)					
MATH205-Differential Equations (3CH)	PCE222 Fluid Mechanics for Chemical and Medical Engineers (3CH)					
	PCE242 Pharmaceutical Physical Chemistry (2 CH)					
	PCE272 Pharmaceutical Physical Chemistry Lab (1CH)					

Third Year						
First Semester Courses (16 CH)		Second Semester Courses (17 CH)			Summer Semester Courses (3 CH)	
GERL301B1	German V (3 CH)	B1-Track	GERL302B1	German VI (3 CH)	B1-Track	PCE5104-DS Process Safety and Hazardous Waste Management (3 CH)
GERL301B2		B2-Track	GERL302B2			
PCE311 Transport Phenomena (3 CH)	PCE312 Separation Processes (3CH)			DS301 Dual Studies Practical III (0 CH)		
PCE3101 Instrumental Analysis (2 CH)	PCE344 Pharmaceutical Technology –Solid Forms (3 CH)					
PCE372 Instrumental Analysis Lab (1 CH)	PCE374 Pharmaceutical Technology –Solid Forms Lab (1CH)					
PCE321 Chemical Reaction Engineering (3CH)	PCE3513 Biochemistry (3CH)					

PCE343 Pharmaceutical Technology –Liquid Forms (3CH)	PCE381 Biochemistry Lab (1CH)
PCE373 Pharmaceutical Technology –Liquid Forms Lab (1 CH)	PCE3201 Mass transfer (3CH)

Fourth Year (in Germany)	
First Semester Courses (12 CH)	Second Semester Courses (12 CH)
four Elective Courses at German Partner University (12CH)	PCE499* International Internship (12 CH)

Fifth Year	
First Semester Courses (14 CH)	Second Semester Courses (18 CH)
BM371 Numerical Methods for Engineers (3CH)	PCE362 Fluid, Heat and Reaction Engineering Lab (1CH)
PCE5101 Unit Operations (3CH)	PCE5202 Pharmaceutical Packaging (2CH)
PCE5102 Chemical process dynamics and control (3 CH)	PCE5201 Statistical Analysis and Quality Assurance (3CH)
PCE5103 Chemical process dynamics and control Lab (1CH)	PCE541 Medicinal Chemistry (3CH)
PCE5105 Computer-Aided Plant Design (3CH)	PCE562 Separation Processes Lab (1CH)
PCE591 Graduation Project I (1CH)	MILS100 Military Science (3 CH)
	NE101 National Education (3CH)
	NEE101 National Education in English (3CH)
	PCE592 Graduation Project II (2CH)