

化学工程与工艺专业国际学生本科指导性培养计划

表一

课程类别	课程性质	课程编号	课程名称	总学分	总学时(学周)	理论授课学时	实践教学				各 学 期 学 时（学周）								考核方式
							实验学时	上机学时	实践学时	实践学周	一	二	三	四	五	六	七	八	
通识与公共基础课程	必修课	112306-8	汉语1-3	12.0	196	196					64	64	64						闭卷
		112309-10	中国概况1-2	4.0	64	64					32	32							闭卷
		113101-4	体育1-4	4.0	144	120			24		36	36	36	36					综合测评
		109133-4	高等数学B1-2	11.0	176	176					80	96							闭卷
		109115	线性代数	2.0	32	32							32						闭卷
		109102	概率与数理统计	3.0	48	48							48						闭卷
		109201	大学物理A	6.0	96	96						96							闭卷
		109208	大学物理实验	1.5	36		36						36						综合测评
		116329	计算机与VB程序设计基础	2.0	32	24		8			32								闭卷
		116330	Visual Basic程序设计	3.0	48	28		20				48							闭卷
		免修课程			14.0	军训、军事理论、思想道德修养与法律基础、中国近现代史纲要、马克思主义基本原理、毛泽东思想和中国特色社会主义理论体系概论、形势与政策。													
	小 计			48.5	872	784	36	28	24	0	244	372	216	36					
选修课	见公共选修课一览表			8.0	160	选修《跨文化交流与国际视野》《西方文化概论》《中国文化概论》和其他5门跨学科门类课程。													

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							实验学时	上机学时	实践学时	实践学周	一	二	三	四	五	六	七	八	
学科基础课程	必修课程	203160	无机化学B	4.0	64	64					64								闭卷
		203162	分析化学	2.0	32	32						32							闭卷
		003128	无机及分析化学实验	1.0	24		24					24							综合测评
		203163-4	有机化学1-2	6.0	96	96							48	48					闭卷
		003129	有机化学实验	1.0	24		24							24					综合测评
		203340-1	物理化学1-2	7.0	112	112								64	48				闭卷
		003119	物理化学实验	1.0	24		24								24				综合测评
		203417	化工制图B	2.0	32	32								32					综合测评
		203345	化工设备机械基础	3.0	48	48									48				闭卷
		205164	电工学基础	5.0	80	64	16								80				闭卷
		203342-3	化工原理A1-2	7.0	112	112									56	56			闭卷
		003341-2	化工原理实验1-2	2.0	48		48								24	24			综合测评
		003304	化工原理课程设计	2.0	2					2						2周			综合测评
		203329	化工热力学	4.0	64	64									64				闭卷
		203322	化学反应工程	4.5	72	64	8									72			闭卷
		203344	化工分离工程	2.0	32	32										32			闭卷
		小 计		53.5	864+7周	720	144			2	64	56	80	264	296+2周	104			
		203325	化工导论	2.0	32	32					32								综合测评

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							实验学时	上机学时	实践学时	实践学周	一	二	三	四	五	六	七	八	
专业课程	必修课	303379	石油加工工艺	2.0	32	32										32			闭卷
		303380	化学工艺学	2.0	32	32										32			闭卷
		303311	化工设计	2.0	32	32										32			综合测评
		303344	化工过程分析与合成	2.0	32	32										32			综合测评
		303371	化工仪表及自动化	2.0	32	32										32			闭卷
		303381	化工过程安全	2.0	32	32									32				综合测评
		303382	化工环境保护	2.0	32	32											32		综合测评
		303366	化工技术经济	2.0	32	32									32				综合测评
		003356	化工CAD制图	1.0	24			24						24					综合测评
		003357	化工过程模拟	1.0	24			24								24			综合测评
		003309	认识实习	1.0	1					1				1周					综合测评
		003358	化工仿真	2.0	48			48									48		综合测评
		003346	生产实习	2.0	2					2							2周		综合测评
		003343	化工专业实验	3.0	72		72										72		综合测评
		003324	化工设计课程设计	3.0	3					3						3周			综合测评

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							实验学时	上机学时	实践学时	实践学周	一	二	三	四	五	六	七	八	
选修课		003359	毕业实习与毕业设计（论文）	15.0	15					15								15周	综合测评
		小 计			46.0	456+21周	288	72	96		21	32		24	1周	64	184+3周	152+2周	15周
	203316	仪器分析*	2.0	32	32							32							综合测评
	203333	化工专业英语*	2.0	32	32											32		综合测评	
	303372	煤化工工艺学	2.0	32	32											32		综合测评	
	303373	精细化工工艺	2.0	32	32											32		综合测评	
	303374	生物化工基础	2.0	32	32											32		综合测评	
	303375	化工项目管理*	2.0	32	32											32		综合测评	
	小 计			12.0	192	192							32				160		
	至少选 6 学分，其中带 * 为建议选修																		

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							实验学时	上机学时	实践学时	实践学周	一	二	三	四	五	六	七	八						
创新创业教育	必修课	Y10010	创新创业基础	1.0	32	20			12				32						综合测评					
	选修课		创新课程	1.0								至少选修 3.0 学分。 学生可在第3-7学期选修科研创新训练 I - V 五个阶段的部分训练。								综合测评				
			开放实验	1.0																				综合测评
			科研创新训练 I	0.5																				综合测评
			科研创新训练 II	0.5																				综合测评
			科研创新训练 III	0.5																				综合测评
			科研创新训练 IV	0.5																				综合测评
			科研创新训练 V	0.5																				综合测评
			创新创业项目	2.0																	至少获得 2.0 学分，不占总学分			
	第二课堂			2.0							至少获得 2.0 学分，不占总学分													

Courses and Teaching Plan for Undergraduate Foreign Students majoring in *Chemical Engineering and Technology*

Table 1

Course Category	Course type	Course code	Course name	Course credits	Hours (Weeks)	Theoretical teaching hours	Experiment & Internship				Semester hours(weeks)								Assessment method	
							Experimental hours	Computer study hours	Field practice hours	Field practice weeks	1	2	3	4	5	6	7	8		
General and public courses	Computersory	112306-8	Chinese Language 1-3	12.0	196	196					64	64	64						Test	
		112309-10	A Survey of China 1-2	4.0	64	64					32	32							Test	
		113101-4	Physical Education 1-4	4.0	144	120				24		36	36	36	36					Comprehensive assessment
		109133-4	Advanced Mathematics B1-2	11.0	176	176						80	96							Test
		109115	linear Algebra	2.0	32	32							32							Test
		109102	Probability and Mathematical Statistics	3.0	48	48								48						Test
		109201	College PhysicsA	6.0	96	96								96						Test
		109208	College Physics Experiment	1.5	36			36							36					Comprehensive assessment
		116327	Computer & VB Programming basics	2.0	32	24			8			32								Test
		116328	Visual Basic Programming Design	3.0	48	28			20				48							Test
		Exemption			14.0	Military Training, Military theory, Ideological and moral cultivation and legal basis, The outline of modern Chinese history, The fundamental tenets of Marxism, An introduction to Mao Zedong thought and the theoretical system of socialism with Chinese characteristics, Situation and Policy.														
	Sub-total			48.5	872	784	36	28	24		245	310	247	76						
	Optional	Select from the list of public optional courses			8.0	160	Select <Cross-cultural Communication and International Vision> <An Introduction to Western Culture> <An Introduction to Chinese Culture> and other 5 interdisciplinary courses													

Courses and Teaching Plan for Undergraduate Foreign Students majoring in *Chemical Engineering and Technology*

Table 2

Course Category	Course type	Course code	Course name	Course credits	Hours (Weeks)	Theoretical teaching hours	Experiment & Internship				Semester hours(weeks)								Assessment method
							Experimental hours	Computer study hours	Field practice hours	Field practice weeks	1	2	3	4	5	6	7	8	
Discipline Basic Courses	Computational	203160	Inorganic Chemistry	4.0	64	64					64								Test
		203162	Analytical Chemistry	2.0	32	32						32							Test
		003128	Inorganic and Analytical Chemistry Experiments	1.0	24		24					24							Comprehensive assessment
		203163-4	Organic Chemistry 1-2	6.0	96	96							48	48					Test
		003129	Organic Chemistry Experiments	1.0	24		24							24					Comprehensive assessment
		203340-1	Physical Chemistry 1-2	7.0	112	112								64	48				Test
		003119	Physical Chemistry Experiments	1.0	24		24								24				Comprehensive assessment
		203417	Chemical Engineering Drawing B	2.0	32	32							32						Comprehensive assessment
		203345	Mechanical Foundation of Chemical Equipment	3.0	48	48								48					Test
		205164	Electrotechnics Basic	5.0	80	64	16								80				Test
		203342-3	Principles of Chemical Engineering A 1-2	7.0	112	112								56	56				Test
		003341-2	Chemical Engineering Principle Experiments 1-2	2.0	48		48							24	24				Comprehensive assessment
		003304	Chemical Unit Process Design	2.0	2					2					2 weeks				Comprehensive assessment
		203329	Chemical Thermodynamics	4.0	64	64									64				Test
		203322	Chemical Reaction Engineering	4.5	72	64	8									72			Test
		203344	Chemical Separation Engineering	2.0	32	32										32			Test
		Sub-total		53.5	864+2 weeks	720	144			2	64	56	80	264	296+2 weeks	104			

Courses and Teaching Plan for Undergraduate Foreign Students majoring in *Chemical Engineering and Technology*

Table 2

Course Category	Course type	Course code	Course name	Course credits	Hours (Weeks)	Theoretical teaching hours	Experiment & Internship				Semester hours(weeks)								Assessment method
							Experimental hours	Computer study hours	Field practice hours	Field practice weeks	1	2	3	4	5	6	7	8	
Special-ized Course	Computational	203325	Introduction to Chemical Engineering and Technology	2.0	32	32					32								Comprehensive assessment
		303379	Petroleum Processing Technology	2.0	32	32										32			Test
		303380	Chemical Technology	2.0	32	32										32			Test
		303311	Chemical Engineering Design	2.0	32	32										32			Test
		303344	Chemical Process Analysis and Synthesis	2.0	32	32										32			Test
		303371	Chemical Instruments and Automation	2.0	32	32										32			Test
		303381	Chemical Process Safety	2.0	32	32									32				Comprehensive assessment
		303382	Chemical Environmental Protection	2.0	32	32											32		Comprehensive assessment
		303366	Technological Economy of Chemical Industry	2.0	32	32									32				Comprehensive assessment
		003356	Chemical Engineering Drawing by CAD	1.0	24			24					24						Comprehensive assessment
		003357	Chemical Process Simulation	1.0	24			24								24			Comprehensive assessment
		003309	Cognition Practice	1.0	1					1				1 week					Comprehensive assessment
		003358	Chemical Technology Simulation	2.0	48			48									48		Comprehensive assessment
		003346	Production Practices	2.0	2					2							2 weeks		Comprehensive assessment
		003343	Experiments of Chemical Engineering & Technology	3.0	72		72										72		Comprehensive assessment

Courses and Teaching Plan for Undergraduate Foreign Students majoring in *Chemical Engineering and Technology*

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Course Category	Course type	Course code	Course name	Course credits	Hours (Weeks)	Theoretical teaching hours	Experiment & Internship				Semester hours(weeks)								Assessment method
							Experimental hours	Computer study hours	Field practice hours	Field practice weeks	1	2	3	4	5	6	7	8	
		003324	Chemical Process Design	3.0	3					3						3 weeks			Comprehensive assessment
		003359	Graduation Practice and Design (Thesis)	15.0	15					15								15 weeks	Comprehensive assessment
		Sub-total		46.0	456+21 weeks	288	72	96		21	32		24	1 week	64	184+3 weeks	152+2 weeks	15 weeks	
	Option-al	203316	Instrumental Analysis *	2.0	32	32							32						Comprehensive assessment
		203333	Chemical Engineering & Technology English Reading*	2.0	32	32											32		Comprehensive assessment
		303372	Fine Chemical Technology	2.0	32	32											32		Comprehensive assessment
		303373	Coal Chemical Technology	2.0	32	32											32		Comprehensive assessment
		303374	Biochemical Engineering Basis	2.0	32	32											32		Comprehensive assessment
		303375	Chemical Engineering Project Management *	2.0	32	32											32		Comprehensive assessment
		Sub-total		10.0	160	160							32				160		
	Choose at least 6 credits,*is necessary																		

Courses and Teaching Plan for Undergraduate Foreign Students majoring in *Chemical Engineering and Technology*

Table 3

Course Category	Course type	Course code	Course name	Course credits	Hours (Weeks)	Theoretical teaching hours	Experiment & Internship				Semester hours(weeks)								Assessment method	
							Experimental hours	Computer study hours	Field practice hours	Field practice weeks	1	2	3	4	5	6	7	8		
Innovation and Entrepreneurship	Compulsory	Y10010	Foundation of Innovation and Entrepreneurship	1.0	32	20			12					32					Comprehensive assessment	
	Optional		Innovation Courses	1.0								Earn at least 3.0 credits.								Comprehensive assessment
			Open Experiments	1.0																Comprehensive assessment
			Research Training I	0.5																Comprehensive assessment
			Research Training II	0.5																Comprehensive assessment
			Research Training III	0.5								Students can take part in part or all of Research Training I - V in semester 3-7.	Comprehensive assessment							
			Research Training IV	0.5									Comprehensive assessment							
			Research Training V	0.5									Comprehensive assessment							
			Innovation and Entrepreneurship Projects	2.0									Earn at least 2.0 credits. BUT those credits are not included in the graduation credits.							
		Second Classroom Activities				2.0							Earn at least 2.0 credits. BUT those credits are not included in the graduation credits.							