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Specifications for Major Program

Name of School (Program) [School of Pharmaceutical Sciences (Program of Pharmaceutical Sciences)]

Program name (Japanese)	薬学プログラム
(English)	Program of Pharmaceutical Sciences
1.	
2.	
3.	

4.

**Program of Pharmaceutical Sciences**

**Policy for design, education and learning method of curriculum**






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## Table of Registration Standards for Liberal Arts Education Subjects

## Program of Pharmaceutical Sciences

Type	Subject type			Required No. of credits	Class subjects, etc.	No. of credits	Type of course registrati on	Year in which the subject is taken(Note 1)																					
								1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grad											
								Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fal										
Liberal Arts Education Subjects	Peace Science Courses			2		2	Required			○																			
	Basic Courses in University Education	Introduction to University Education		2	Introduction to University Education		2	Required	○																				
		Introductory Seminar for First-Year Students		2	Introductory Seminar for First-Year Students		2	Required	○																				
		Advanced Seminar		0	Advanced Seminar		2	Free elective	○	○																			
	Common subjects	Area Courses  (Note 9)		4	Courses in Arts and Humanities/SocialSciences		2	Elective/required	○	○																			
				4	Courses in Natural Sciences		2	Elective/required		○																			
		Foreign Languages	English (Note 2,3)	Communication Seminar	2	Communication Seminar I		1	Required	○																			
				Communication Seminar II		1		○																					
				Communication I	2	CommunicationIA		1	Required	○																			
			Communication IB		1	○																							
			Communication II	2	Communication IIA		1	Required		○																			
				Communication IIB		1			○																				
			Non-English Foreign Languages (Select one language from German, French and Chinese) (note 4, 5)		0	Basic Foreign Language I		1	Free elective	○																			
		Basic Foreign Language II				1	○																						
		Basic Foreign Language III				1		○																					
		Basic Foreign Language IV				1		○																					
		Information and Data Science Courses		2	Introduction to Information and Data Sciences		2	Required	○																				
				2	Information and Data Science Courses		2	Elective/required		○																			
		Health and Sports Courses		2			1or2	Elective/required	○	○																			
		Social Cooperation Courses		0			1or2	Free elective	○	○																			
		Foundation Courses			4	Psychology for Medical Care Workers(Note 6)		2	Required		○																		
	Statistics					2		○																					
	2				Foundation physics for life science(Note 7)		2	Elective/required	○																				
					Foundation biology for life science(Note 8)		2		○																				
	4				Species Biology		2	Elective/required	○																				
					Basic Calculus		2		○																				
					Basic Linear Algebra		2			○																			
				2 subjects from the three subjects above																									
	Total(Liberal Arts Education Subjects)			36																									

Note 1: The indicated semester represents that in which students typically take the subject. If they have failed to earn the credit in the semester, it is allowed to take the subject after the semester. It is required to confirm the semester in which the subject is provided in the class schedule for liberal arts education subjects that is published every academic year, because some subjects might be provided in a semester other than that which is shown in this document.

Note 2: The 6 credits for English subjects essential for the graduation could be replaced with the credits of the subjects those language of instruction in the syllabuses are "E:English". For the details, refer to pages of the liberal arts education in the Students Handbook.

Note 3: The credits for "Online English Seminar A" and "Online English Seminar B" that are earned through a program of self-study, are accepted as the credit for English required for graduation (6 credits). Achievement in a foreign language skill test and language training might be accepted as credit. For the details, refer to the description regarding English subjects in the liberal arts education and the item "Credit based on Achievement in Foreign Language Skill Test" in the Students Handbook.

Note 4: Although 4 credits of "Basic Foreign Language" are not included as those required for graduation, it is recommended to earn those credits.

Note 5: Achievement in a foreign language skill test and language training might be accepted as credit. For the details, refer to the description regarding foreign language subjects in the liberal arts education and the item "Credit based on Achievement in Foreign Language Skill Test" in the Students Handbook.

Note 6: It is required to take the subject "Psychology for Medical Care Workers" that is provided in the first year. Only when failing to earn the credit for "Psychology for Medical Care Workers" is the credit for the subject "Psychology A" or "Psychology B" accepted as that for the information subjects required for graduation (2 credits).

Note 7: Students who did not take the subject "Physics" in the Common Test for University Admissions are required to take the subject "Foundation physics for life science."

Note 8: Students who did not take the subject "Biology" in the Common Test for University Admissions are required to take the subject "Foundation biology for life science."

Note 9: Of the 4 credits required for the disciplinary subjects (Courses in Arts and Humanities/SocialSciences), 2 credits are required to be earned for the subject "Ethics."

Table of Registration Standards for Liberal Arts Education Subjects

## Program of Pharmaceutical Sciences

Type	Subject type	Lesson Style	Required No. of credits	Class subjects, etc.	No. of credits	Type of course registration	Year in which the subject is taken																				
							1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grade										
							Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall									
Specialized Education Subjects	Basic Specialized Subjects	Lecture	45	Practical English for Pharmaceutical Students	2	Required				②																	
				Introduction to Pharmaceutical Sciences	2			②																			
				General Chemistry	2		②																				
				Pharmaceutical Analysis	2			②																			
				Nuclear Pharmacy	2				②																		
				Organic Chemistry IA	1		①																				
				Organic Chemistry IB	1		①																				
				Biochemistry I	2			②																			
				Biochemistry II	2			②																			
				Biological Chemistry III	2				②																		
				Public Health Chemistry I	2				②																		
				Basic Kampo Medicine	2					②																	
				Microbiology	2					②																	
				Public Health Chemistry II	2				②																		
				Pharmaceutical Physical Chemistry	2				②																		
				Bio-Analytical Science	2				②																		
				Natural Products Chemistry	2				②																		
				Biological Chemistry IV	2				②																		
				Biopharmaceutics	2					②																	
				Biochemistry V	2					②																	
				Organic ChemistryⅡ A	1			①																			
				Organic ChemistryⅡ B	1			①																			
				Pharmacology I	2					②																	
				Functional Morphology	2				②																		
				Outline of Pathology	1									①													
				Total(Basic Specialized Subjects)				45		4	10	18	12			1											
	Specialized Subjects	Seminar	4	Japanese Pharmacopoeia	2	Required																②					
				Research PracticeA	1					①																	
				Research PracticeB	1						①																
			(2)	Practice for clinical food science	2	Free elective						2															
			Total(Seminar)				6					1	1	2					2								
		Lecture	(2)	Clinical food science	2	Free elective							2														
			62	Herbal medicine & Kampo medicine	2	Required					②																
				Pharmacokinetics	2						②																
				Biochemistry VI	2						②																
				Biophysical Chemistry	2						②																
				Antibiotics and Drug resistance	2						②																
				Physiological Chemistry	2						②																
				Organic Chemistry III	2				②																		
				Medicinal Organic Chemistry	2					②																	
				Pharmacology II	2					②																	
				Industrial Pharmaceutics	2						②																
				Cell Motility	2							②															
				Genetic Engineering	2							②															
				Organic Chemistry IV	2					②																	
				Public Health Chemistry III	2						②																
				Biological Statistics	2						②																
				Pharmacology III	2					②																	
				Pharmacology IV	2						②																
				Clinical Pharmacy	2							②															
				Clinical Medicine and Pharmacotherapy I	2							②															
				Pharmacotherapy A	2							②															
				AnOutline of Immunology	2							②															



Type	Subject type	Lesson Style	Required No. of credits	Class subjects, etc.	No. of credits	Type of course registration	Year in which the subject is taken													
							1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grade			
							Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall		
Specialized Education Subjects	Specialized Subjects	Lecture	62	Clinical Medicine and Pharmacotherapy II	2	Required								②						
				Pharmaceutical Affairs Related Laws	2							②								
				Clinical Pharmacology A	2								②							
				Pharmacotherapy B	2								②							
				Drug Informatics	2									②						
				Clinical Medicine and Pharmacotherapy III	2									②						
				Clinical Pharmacology B	2										②					
				Clinical Pharmacology C	2										②					
				Pharmacoeconomics	2								②							
				Clinical Evaluation	2									②						
			Total(Lecture)				64				2	6	14	12	16	10	4			
		Practice	33	Experiments in Analytical Chemistry	1	Required					①									
				Training of Physical Chemistry	1															
				Experiments in Organic Chemistry	1															
				Experiments of Cellular and Molecular Biology	1															
				Experiments of Biological Chemistry	1															
				Experiments of Pharmacognosy	1															
				Experiments of Microbial Chemistry	1															
				Pharmacology Practice	1															
				Practice of Pharmaceutics	1															
				Experiments of Environmental Health Science	1															
				Pharmacy Practice	3															
				Clerkship in Clinical PharmacyA	10															
				Clerkship in Clinical PharmacyB	10															
			Total(Practice)				33					5	5			3	20			
	Special Study for Graduation	10	Special laboratory Works in Pharmaceutical Sciences I	2	Required							②								
			Special laboratory Works in Pharmaceutical SciencesII	2																
			Special laboratory Works in Clinical Pharmacy I	2											②					
			Special laboratory Works in Clinical Pharmacy II	2											②					
			Special laboratory Works in Clinical PharmacyIII	2											②					
		Total(Special Study for Graduation)				10							4			6				
	Total(Specialized Subjects)				113				2	11	20		48			32				
		154	Total(Specialized Education Subjects)		158															

NOTE: The number enclosed in a circle indicates a required subject.

Graduation requirement	Required No. of credits
Liberal Arts Education Subjects	36
Specialized Education Subjects	154
Basic Specialized Subjects	45
Required Subjects	45
Specialized Subjects	109
Required Subjects (Seminar)	4
Free elective subjects (Seminar)	(2)
Free elective subjects (Lecture)	(2)
Required Subjects (Lecture)	62
Required Subjects (Practice)	33
Required Subjects (Special Study for Graduation)	10
Total	190

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	-	Oc nd fijrg b i pi mmoi dbja nd nonp opm' ketnd g c m o m m i m øðji ja h dd i j oc md jnb id i jnb id jhkjpi n) lp gbt	,) db g oj skgd g ngt anj h h d gkjdoja qdr jpooc nd nonp opm' ketnd g c m o m m i m øðji ja h dd i d jnb id i jnb id jhkjpi n) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 3 )	,) db g oj skgd g ngt jpooc nd nonp opm' ketnd g c m o m m i m øðji ja h dd i d jnb id i jnb id jhkjpi n) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 2 )	,) db g oj skgd jpooc nd nonp opm' ketnd g c m o m m i m øðji ja h dd i d jnb id i jnb id jhkjpi n) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 1 )
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	0	Pi mmoi db ji midb kmn nq øðji jaoc jnt no h i gh iqdijih io' pnnja iqdijih iog kjgpoion' i oc dnd øpi nji cph in) lp gbt ⑤	,) db g oj skgd anj h h d gkjdoja qdr jpo jnt no h' kmn nq øðji jagd b iqdijih io' jhkji ionja iqdijih iog jiohd øðji' i cph i aa on) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 3 )	,) db g oj g ngt skgd jpo jnt no h' kmn nq øðji jagd b iqdijih io' jhkji ionja iqdijih iog jiohd øðji' i cph i aa on) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 2 )	,) db g oj skgd anj h jpo jnt no h' kmn nq øðji jagd b iqdijih io' jhkji ionja iqdijih iog jiohd øðji' i cph i aa on) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 1 )
	1	Fijrg b i pi mmoi db jpo m øðji gi gnnjakc nh jfd odn d jm moj oj pi mmoi lp iocb ød g h dd g aa on j mnd aa on) lp gbt ②	,) db g oj jhkmc ind g skgd anj h h d gkjdoja qdr jpooc g jbd gi gndh ja kc nh jfd odno jpi mmoi h d g aa on i nd aa on lp iocb ød g) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 3 )	,) db g oj jhkmc ind g skgd oc g jbd gi gndh jakc nh jfd odno jpi mmoi h d g aa on i nd aa on lp iocb ød g) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 2 )	,) db g oj skgd oc g jbd gi gndh ja kc nh jfd odno jpi mmoi h d g aa on i nd aa on lp iocb ød g) -)Oc g midb coðh iogq gdh gpgo n i q mb q øðji jabm n n ji ndi o ajnh pg ) Oc noi m dhj m oc i 1 )

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	2	Oc fijrg b i pi mmoi dbja jhhpid ɔɟi rɔc h d go hn mgodbojh d ɔɟi) lp gbt ③ ④	,) db gojh f jhhpid ɔɟi rɔc jɔc m h d gnoaji h d ɔɟi n h h mjah d g o h) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db gojh f jhhpid ɔɟi rɔc jɔc m h d gnoaji h d ɔɟi) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 2 )	,) db goj skgd oj jɔc mh d gnoaji h d ɔɟi) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 1 )	
Fijrg b i Pi mmoi db	3	hknjqdb ibghe jhkmc indji oj lpdn k ɔt jah d gjm c hd g ibghe)	Oc gqgja cdq h iordɣ nnn n ji ajnhpg ɔ od ɣ noc q mb kjdon gpgo n ji ɔ nop ioʻnOJ njm i i q ɣ ɔɟi d gm)3 dhhdhph)	Oc gqgja cdq h iordɣ nnn n ji ajnhpg ɔ od ɣ noc q mb kjdon gpgo n ji ɔ nop ioʻnOJ njm i i q ɣ ɔɟi d gm)2 dhhdhph)	Oc gqgja cdq h iordɣ nnn n ji ajnhpg ɔ od ɣ noc q mb kjdon gpgo n ji ɔ nop ioʻnOJ njm i i q ɣ ɔɟi d gm)1 dhhdhph))	
	4	Oc ɔgt ja jind nɔb nd kcnh jgbd g a onjah dd oj c hd gnomp opm) lp gbt	,) db goj skgd nd h d g a onmgodboj c hd gnomp opmnjah dd ) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db goj iph mo i skgd nd h d g a on i c hd gnomp opmnjah dd ) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 2 )	,) db goj skgd nd h d g a on i c hd gnomp opmnjah dd ) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 1 )	
	,	ɔd n n f d n ja ɔ d b n k pgo h ejm d n n n a n h m ɔ ɟ i j a g d d go n o q ɣ n) lp gbt ②	,) db goj iph mo i skgd h ejm d n n n n p h a n h i j n h g g d d g n j m n) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db goj iph mo i skgd nd kjdon jah ejm d n n n p h a n h i j n h g g d d g n j m n) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 2 )	,) db goj skgd nd kjdonjah ejm d n n n n p h a n h i j n h g g d d g n j m n) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 1 )	
	,,	Fijrg b ja q i pood b( b o cijgibt ɔ o d h q i d b t t t i ɔ n k k g l ɔ ɟ i d h d g m) lp gbt ①	,) db goj skgd d i nt(oj(pi mmoi h ii manj ɔ k m k ɔ d j a h d g k n j a n n ɔ ɟ i g j p o q i p o o d b( b o c i j g b t ɔ o d h q i d b t t t i ɔ n p n d h d g m) -) cdq h iogq gh gpgo noc q mb bm ja g n k n a j n h i p n d b k m o n h d	,) db goj skgd d i nt(oj(pi mmoi h ii moc q i pood b( b o cijgbdnoc o m q i d b t t t i ɔ d n p n d h d g m) -) cdq h iogq gh gpgo noc q mb bm ja g n k n a j n h i p n d b k m o n h d ajnhpg)Oc noi m dh2 jmhjm)	,) db goj skgd d i nt(oj(pi mmoi h ii moc q i pood b( b o cijgbdnoc o m q i d b t t t i ɔ d n p n d h d g m) -) cdq h iogq gh gpgo noc q mb bm ja g n k n a j n h i p n d b k m o n h d ajnhpg)Oc noi m dh1 jmhjm)	
ɔ d n i f d n	,	ɔ d n j a j g ɔ d b i n n m d a j n h ɔ ɟ i j i h d ɔ ɟ i) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db goj jg oi n n m d a j n h ɔ ɟ i j i h d ɔ ɟ i) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db goj iph mo i skgd nd kjdon i n n m a j n h d ɔ ɟ i) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 2 )	,) db goj skgd nd kjdon i n n m a j m h d ɔ ɟ i) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 1 )	
	-	db goj n mcajmojsd jnn' onbo jnb in' nthkojhnja kjdhjidd' h nbi t knj pm i ojsd ɔɟi ja c hd gnp noi n) lp gbt ⑤	,) db goj skgd i n mcajmh npmnji kjdhjidd' onbo jnb in' kjdhjidd nthkojhn' h nbi t o m o h i o n i o j s d ɔ ɟ i j a c h d g n p n o i n) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db goj n mcajmh npmnji kjdhjidd' onbo jnb in' kjdhjidd nthkojhn' h nbi t o m o h i o n i o j s d ɔ ɟ i j a c h d g n p n o i n) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 2 )	,) db goj skgd n mch npmnji kjdhjidd' onbo jnb in' kjdhjidd nthkojhn' h nbi t o m o h i o n i o j s d ɔ ɟ i j a c h d g n p n o i n) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 1 )	
	.	ɔ d n n f d n j a c d f d b r t n j a j k d b o j m p c n h a p g a o n n d a a o n j a h d d ) lp gbt	,) db goj iph mo nd h ɔ n m m g o d b o j h n p m n o j m n c n h a p g a o n n d a a o n j a h d d i j i p o r t n j a n j ɔ ɟ i) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 3 )	,) db goj iph mo nd h ɔ n m m g o d b o j h n p m n o j m n c n h a p g a o n n d a a o n j a h d d i s k g d r t n j a n j ɔ ɟ i) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 2 )	,) db goj iph mo nd h ɔ n m m g o d b o j h n p m n o j m n c n h a p g a o n n d a a o n j a h d d i s k g d ɔ c h) -)Oc g midb ɔd h iogq gh gpgo n i q mb q ɣ ɔɟi jabm n n ji ndi o ajnhpg ) Oc noi m dhjm ɔ i 1 )	



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q ɣp ɔɔji ɔ h n			s ɣgio	nt Bjj	Bjj	
	-	ɔɔt oj ke nh ɔɔrcj d h mgl ji ijo jig t h d go h po ɣnj t ɔɔu in 6oc ɔɔt oj jind mo jak ɔdion) lp ɔbt ④	,) db g oj g tnf k ɔc sɔoi ja k ɔdion i of ɔɔji oj jh mgl g ke nh ɔɔi jo jig anj h h d go hn po ɣnj anj h i ɔɔji gk jkg) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 3 )	,) db g oj g tnf k ɔc sɔoi ja k ɔdion i ɔnt oj of ɔɔji oj jh mgl g ke nh ɔɔi jo jig anj h h d go hn po ɣnj anj h i ɔɔji gk jkg) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 2 )	,) db g oj g tnf k ɔc sɔoi ja k ɔdion i skg di nn m h ɔo m oj jh mgl g ke nh ɔɔi jo jig anj h h d go hn po ɣnj anj h i ɔɔji gk jkg) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 1 )	
j h k m c i n d j	- ,	j h k m c i n d j k n j g h ( n j g d b ɔɔt i p ɔɔji g ɔɔt 5 ji midb ɔc d ɔp i n p n t i p h n j p n c h d g n p n o i n s c h o d b j i ɔ c m ɔ c ' o j g o j i g u i n b p j p o ɔ c n p n d j g j a ɔ c p h i m ) ɣ n j ' o j c q ɔ c ɔɔt i n f d ɔ n o j b d j d n o n p ɔɔji o j t j p ɔ c ) lp ɔbt	,) db g n ke nh ɔɔj m h d g m n m c m o j i g u ɔ ɔ n j a q n d j p n f d n j a c h d g n p n o i n j i m ɔ c o j c p h i n ' b i m g t n o c h o r t n j a n p n d j g j a c p h i n ' ɔ d j g ɔ n t o j a d ɔ c n j g p ɔ d j i j a ɔ c d n p n i q d h ɔ c i s o b i m ɔ d j i ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 3 )	,) db g n ke nh ɔɔj m h d g m n m c m o j i g u ɔ ɔ n j a q n d j p n f d n j a c h d g n p n o i n j i m ɔ c o j c p h i n i ɔ n t o j a d n j g p ɔ d j i a j m n p n d j g j a c p h i n ' i q d h ɔ c i s o b i m ɔ d j i ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 2 )	,) C q d b l p d n i ɔ ɔ d p n ke nh ɔɔj m h d g m n m c m o j i g u ɔ ɔ n j a q n d j p n f d n j a c h d g n p n o i n j i m ɔ c o j c p h i n i ɔ n t o j a d n j g p ɔ d j i a j m n p n d j g j a c p h i n ' i d b g o j q d h ɔ c i s o b i m ɔ d j i ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 1 )	
		- g ( ɔo nh i o j a c m o m a j n h ɔ d j i n h d g k n j a n n d j i g 5 ɔ c k k n j k n d o ɔ d j i i ɔ ɔ d p d b r m j a ɔ c o k e n h ɔ ɔ d h k n j a n n d j i g m g ɔ d b o j c p h i g h ) Oc f i j r g b i p i m o i d b o j c q j h h p i d ɔ d j i i j o j i g r d c d d b k j k g p o r d c j ɔ c m h d g n o ɔ d h d g o h ) lp ɔbt ③ ④	,) d b r m ɔ c o k e n h ɔ ɔ d h k n j a n n d j i g m g ɔ d b o j c p h i g h ' d b g o j c q i ɔ ɔ d p o j o f ɔ c k k n j k n d o h d i h f k k n j k n d o j h h p i d ɔ d j i i j o j i g r d c d d b k j k g p o r d c k ɔ d i o n i j ɔ c m h d g n o ɔ ɔ n h h m j a h d g o h ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 3 )	,) d b r m ɔ c o k e n h ɔ ɔ d h k n j a n n d j i g m g ɔ d b o j c p h i g h ' d b g o j c q i ɔ ɔ d p o j o f ɔ c k k n j k n d o h d i h f j h h p i d ɔ d j i i j o j i g r d c d d b k j k g p o r d c k ɔ d i o n i j ɔ c m h d g n o ɔ ɔ n h h m j a h d g o h ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 2 )	,) d b r m ɔ c o k e n h ɔ ɔ d h k n j a n n d j i g m g ɔ d b o j c p h i g h ' c q d b c i ɔ ɔ d p o j o f ɔ c k k n j k n d o h d i h f j h h p i d ɔ d j i i j o j i g r d c d d b k j k g p o r d c k ɔ d i o n i j ɔ c m h d g n o ɔ ɔ n h h m j a h d g o h ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 1 )	
	.	Oc m n m c ɔɔt 5 ɔ c ɔɔt oj n g o d n p n o j n j g d ɔ c k n j a n n d j i g a d g j a k e n h ɔ o i n n t j p o h n p m n i m n m c o j n j g ɔ c d n p n ) lp ɔbt ②	,) db g o j n g o d n p n o j n j g d ɔ c k n j a n n d j i g m j a k e n h ɔ o ' k g i ɔ c r t n j a n j g p ɔ d j i t ɔ c h n g n i j i p o ɔ c m n m c ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 3 )	,) db g o j n g o d n p n o j n j g d ɔ c k n j a n n d j i g m j a k e n h ɔ o i j i p o r t n j m m n m c o j n j g ɔ c d n p n ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 2 )	,) db g o j j i p o h n p m n j m m n m c o j n j g d n p n o j n j g d ɔ c k n j a n n d j i g m j a k e n h ɔ o ) -)Oc g midb ɔɔdh iogq gdh gpg o n i q mb q ɣp ɔɔji jabm n n ji ndi o ajnh pg ) Oc noi m dh hjm ɔc i 1 )	

Mjg jagl mg non p ɔɔji d ɔc d h h ej m k n j b m h

Oc gl mg non p ɔɔji d ɔc d h h ej m k n j b m h d n o j p d g ɔ c h d a j p i ɔ d j i m l p d n a j m ɔ c n k d g l u p ɔ d j i ' a j n o m ɔ c d n m l p d n t h d g n o ɔ ' i q g i k ɔ c g l b p c h o d ɔɔt m l p d n a j m j k d b r d c b g j g l u ɔ d j i i c q d b j i m a j m k ) ɣ n j ' n o p i o n m s k o o j q g i k ɔ c d n n d i ɔ d d o g g b i i k ɔ d n a j m k n j g h n j g d b n j i ɔ c d n ɔɔt oj j g g o ' i g u ' i n d d u d a j n h ɔ d j i ɔ n j p b c ɔ c g l m g n o n p ɔ d j i d ɔ c d h h ej m k n j b m h ) Oc n j p b c ɔ c d p ɔ d j i ' n o p i o n m i g o j a j n o m k e p h i d t i r d ( m i b d b d o g g b i )

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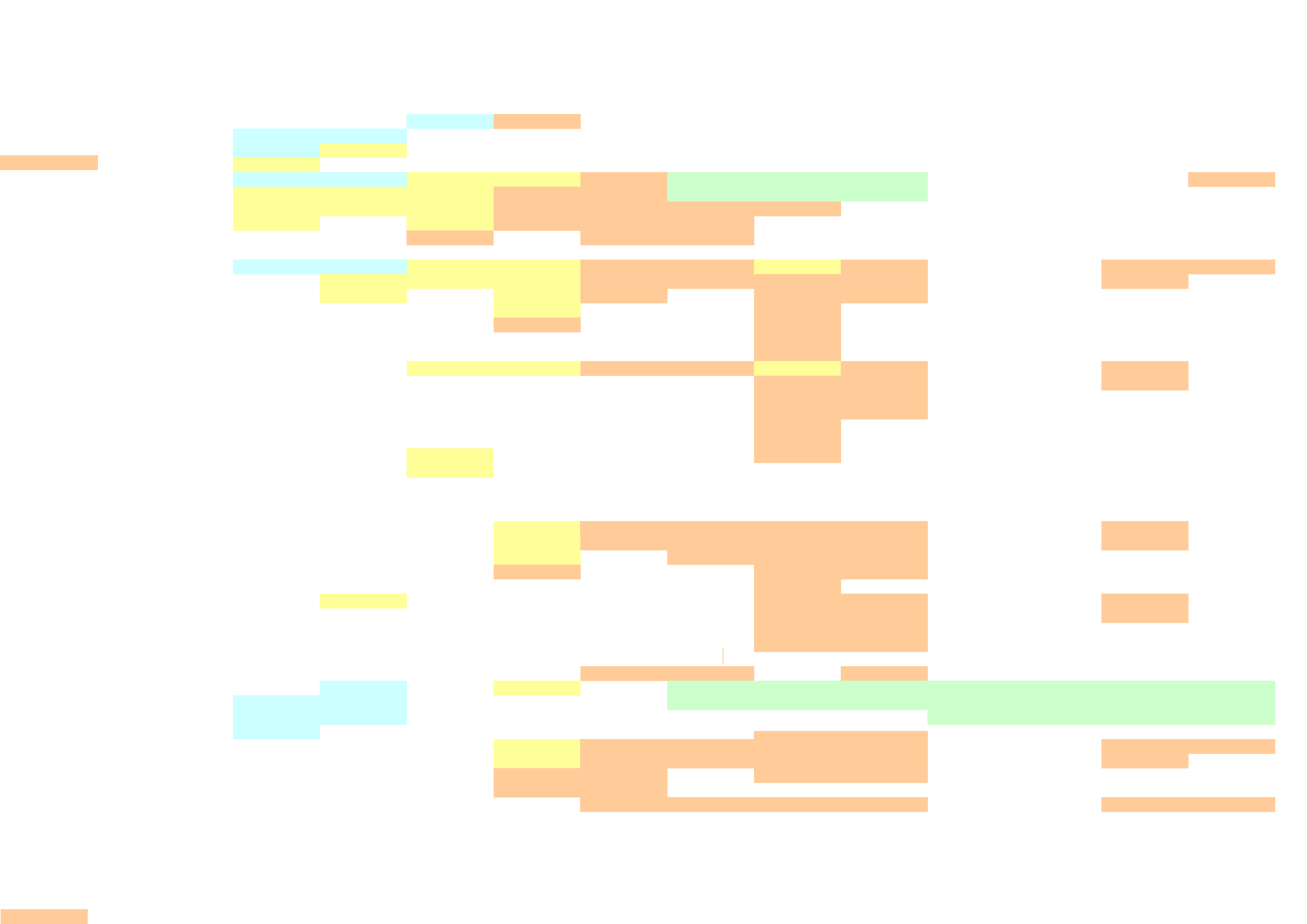
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## Curriculum Map of Pharmaceutical Sciences Program

Academic achievements		1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grade	
		Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
Evaluation items technology that is advancing day by day and its application in medical care. qualit						Special laboratory Works in Pharmaceutical Sciences				Special laboratory Works in Clinical Pharmacy			
										Special laboratory Works in Clinical Pharmacy			

Academic achievements Evaluation items	1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grade	
	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
Information and Data Science Courses	Information and Data Science Courses	Information and Data Science Courses		Pharmacology I	Research PracticeA							
		Introduction to Pharmaceutical Sciences		Microbiology	Antibiotics and Drug resistance							
				Pharmac o								
Pharmacology Courses												
Pharmaceutical Sciences Courses												
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Curriculum Map of Pharmaceutical Sciences Program

Academic achievements		1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grade	
Evaluation items		Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
Comprehensive problem-solving ability and educational ability: Concerning the influences caused by numerous chemical substances existing on the earth, to be able to analyze and argue about the survival of the human race. Also, to have the ability and skills to give instruction to youth. quality	Introductory Seminar for First-Year Students	Social Cooperation Courses				Research PracticeA	Special laboratory Works in Pharmaceutical Sciences I		Special laboratory Works in Clinical Pharmacy				
	Introduction to University Education	Introduction to Pharmaceutical Sciences					Special laboratory Works in Pharmaceutical Sciences		Special laboratory Works in Clinical Pharmacy				
	Social Cooperation Courses					Research PracticeB			Special laboratory Works in Clinical Pharmacy				
Self-betterment of character formation as a medical professional : the appropriate action and attitude being aware of that a pharmacist is a professional relating to human life. The knowledge and understanding to have communication not only with ailing people but with other medical staff in a medical team. quality	Introductory Seminar for First-Year Students	Social Cooperation Courses							Pharmacy Practice	Clerkship in Clinical Pharmacy			
	Information and Data Science Courses	Information and Data Science Courses								Clerkship in Clinical Pharmacy			
	Introduction to University Education	Introduction to Pharmaceutical Sciences											
	Social Cooperation Courses												
The research ability: the ability to select issues to be solved in the professional field of pharmacist and carry out measures and research to solve the issues. quality	Introductory Seminar for First-Year Students	Social Cooperation Courses	Nuclear Pharmacy( )	Experiments of Cellular and Molecular Biology	Research PracticeA	Special laboratory Works in Pharmaceutical Sciences I		Special laboratory Works in Clinical Pharmacy					
	Information and Data Science Courses	Information and Data Science Courses			Experiments of Environmental Health Science	Special laboratory Works in Pharmaceutical Sciences		Special laboratory Works in Clinical Pharmacy					
	Introduction to University Education	Introduction to Pharmaceutical Sciences			Experiments of Microbial Chemistry	Research PracticeB		Special laboratory Works in Clinical Pharmacy					
	Social Cooperation Courses												

Selection of Program on matriculation (Students in Program of Pharmaceutical Sciences, School of Pharmaceutical Sciences)

## First Step

Liberal Arts Education Program

required elective: ☞ Course Table

Introductory Seminar • Early Practice Training

compulsory: ☞ Course Table

Communication • Humanism

compulsory: ☞ Course Table

## Second Step

Structure and Properties of Materials

required elective: ☞ Course Table

Natural Medicines

compulsory: ☞ Course Table

Biological Structure and Function

compulsory: ☞ Course Table

## Third Step

Action of Medicines

required elective :  
☞ Course Table

Diseases and Pathologies

required elective:  
☞ Course Table

Pharmacist Services

compulsory:  
☞ Course Table

Pharmaceutical Laws and Regulations

compulsory:  
☞ Course Table

Pharmacokinetics of medicines

compulsory:  
☞ Course Table

Preparation of pharmaceuticals and administration of medicines

compulsory:  
☞ Course Table

Health and Environmental

compulsory:  
☞ Course Table

Practice

compulsory:  
☞ Course Table

If a student has not taken a compulsory subject, the student cannot progress to the fourth step.

## Fourth Step

Pharmacy Practice

compulsory: ☞ Course Table

Common Achievement Test (Successful Applicants)

compulsory

Clerkship in Clinical Pharmacy A/B

compulsory: ☞ Course Table

## Fifth Step

Research Practice A/B

compulsory: ☞ Course Table

Laboratory Works for Graduation

compulsory: ☞ Course Table

Diseases and Pathologies

compulsory: ☞ Course Table

Requirement for Graduation: Completion of Program of Pharmaceutical Sciences

Graduation of Program of Pharmaceutical Sciences,  
School of Pharmaceutical Sciences, Bachelor of Pharmaceutical Science