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

Evaluation Policy for Learning Achievements

The learning achievements are evaluated by the suitable ways to each learning method of the curriculum based on the above Curriculum policy 1) to 11), and the program aims to achieve the

Besides these evaluations, students are appraised by their attainment of the goals set by the Program of Pharmaceutical Sciences.

To promote the systematic learning, the program sets a certain standard for the assignment to laboratories. To take the Clerkships in Clinical Pharmacy, the Common Achievement Test which is also set a certain standard is assigned.

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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 registration	Year in which the subject is taken(Note 1)											
									1st grade		2nd grade		3rd grade		4th grade		5th grade		6th grade	
									Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
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			4	Courses in Arts and Humanities/SocialSciences	2	Elective/required	○	○										
		(Note 9)			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 esential 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 ChemistryⅡA	1			①										
				Organic ChemistryⅡB	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					①								
				Experiments in Organic Chemistry	1					①								
				Experiments of Cellular and Molecular Biology	1					①								
				Experiments of Biological Chemistry	1					①								
				Experiments of Pharmacognosy	1						①							
				Experiments of Microbial Chemistry	1						①							
				Pharmacology Practice	1						①							
				Practice of Pharmaceutics	1						①							
				Experiments of Environmental Health Science	1						①							
				Pharmacy Practice	3									③				
				Clerkship in Clinical Pharmacy A	10										⑩			
				Clerkship in Clinical Pharmacy B	10										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 Sciences II	2								②					
				Special laboratory Works in Clinical Pharmacy I	2										②			
				Special laboratory Works in Clinical Pharmacy II	2										②			
				Special laboratory Works in Clinical Pharmacy III	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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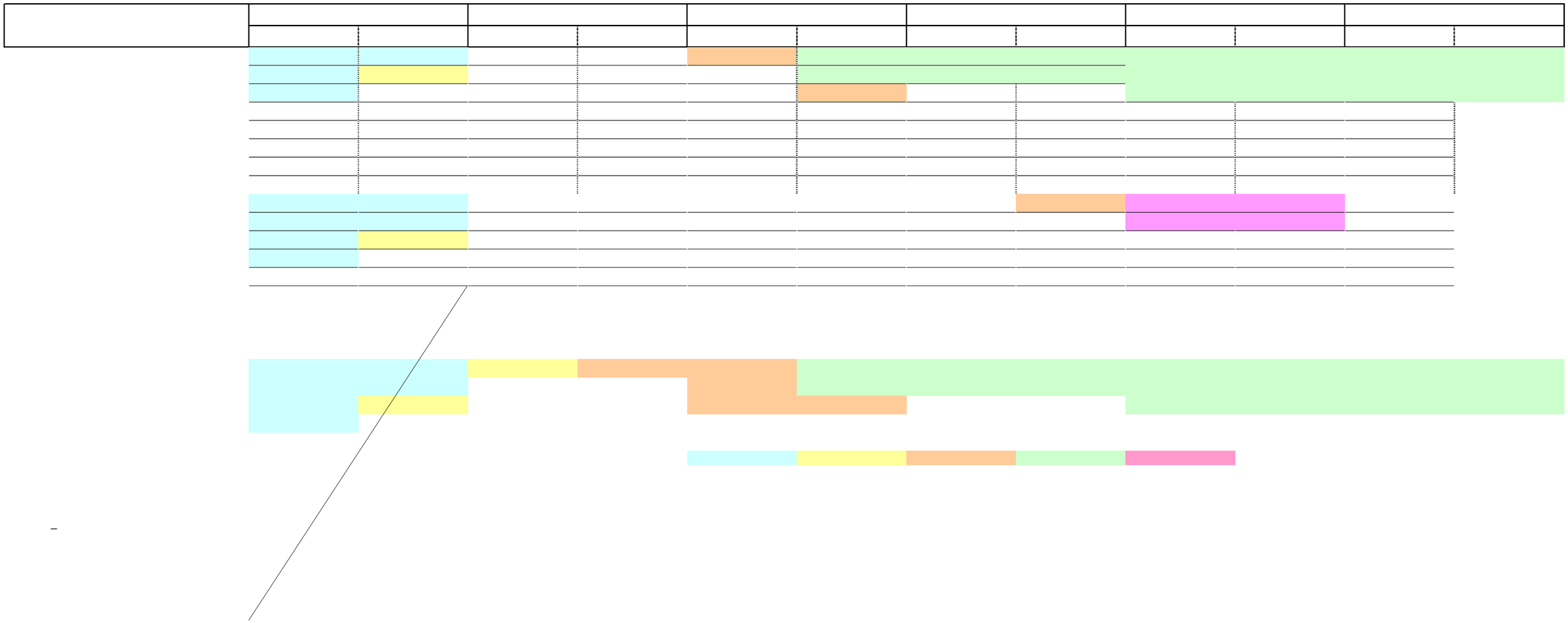

Program of Pharmaceutical Sciences: Course Step

Sheet 5

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 pharmaceutics 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