#### Appended Form 1

### Specifications for Major Program

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

Program name (Japanese)	
(English)	Program of Pharmaceutical Sciences

1. Degree to be obtained: Bachelor of Pharmaceutical Science

2. Overview

The Program of Pharmaceutical Sciences aims to foster students who are able to develop a new field of knowledge and contribute to local/global communities having a rich humanity by reinventing themselves looking ahead the future society based on the tradition of the pharmaceutical sciences. Specifically, this program provides students education to allow them to acquire 1) the fundamental knowledge and skills required to become pharmacists who are capable of understanding and diagnosing a patient's condition, of judging and suggesting prescriptions, and of taking responsibility for appropriate use of medicines and medical supplies; 2) the advanced skills required for exercising their creative thinking abilities to try to solve new problems actively and autonomously, as well as the opportunity to exercising those skills experimentally; 3) the advanced medical knowledge required to foster skills as pharmacists who have a high level of expertise and are capable of taking part in discussion in team medical care from a scientific point of view; 4) the ethics and improved communication skills required of a clinical pharmacist; and 5) the research abilities to orient them toward the world-leading researches in the pharmaceutical sciences and to enable them to contribute to the development of new drug therapy.

This program is highly systematically designed to foster students who will advance to graduate school and to acquire advanced knowledge and skills as expert pharmacists and ethics as medical staff while expecting them to become practical pharmacists in a medical institution, or to work as researchers engaged in such fields as the development of new medicine mechanisms of action, and metabolic end result that are required for understanding the processes of the pharmacological action of medicines, and the ability to explain and exercise that knowledge, those skills, and that attitude;

- 5) The capability to understand basic and applied knowledge of drug therapy, and to explain the standard methods of drug therapy for major diseases of every organ;
- 6) Fundamental knowledge, skills, and attitude regarding the effect of medicines and chemical substances on a human being and the effect of living environment and global ecosystem on human health, and the ability to explain and exercise that knowledge, those skills, and that attitude;
- 7) The fundamental knowledge, skills, and attitude regarding pharmacy itself, laws and institutions related to medicines, and economics and pharmacy businesses that are required for understanding the responsibilities and duties of pharmacists in society, and the ability to explain and exercise that knowledge, those skills, and that attitude;
- 8) The fundamental knowledge, skills, and attitude for the dispensing, formulation, explanation of medicine instructions and assistance for prescription designing required for working as a member of a medical team, and the ability to explain and exercise that knowledge, those skills, and that attitude;
- The ability to identify problems, and to indicate a way of solving them, to work as pharmacists who can flexibly cope with various needs of medical workers;
- 10) The fundamental capability to identify new information and knowledge, and to autonomously improve one's ability, in order to keep up with progress in pharmaceutical and other sciences and medicine;
- 11) An understanding of the importance of development of juniors medical staff, and the ability to contribute to it by educating the pharmacists of the next generation.
- 4. Curriculum policy (policy for arranging and implementing the curriculum)

#### **Program of Pharmaceutical Sciences**

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

In the Program of Pharmaceutical Sciences, the curriculum (educational course) is arranged according to the policies described below in order to develop medical staff who have abilities mentioned in the diploma policy and have deep humanity and wide-ranging intelligence.

- To allow students to acquire fundamental knowledge such as physics, biology, mathematics and "Psychology for Medical Care Workers" as well as basic study ability in a wide variety of areas, the curriculum provides the peace study subjects, fundamental subjects for university education, disciplinary subjects, foreign language subjects, information and data science subjects, health and sports subjects, society-related subjects, and fundamental subjects, structured in such a way as to provide those subjects to the whole university in the 1<sup>st</sup> and 2<sup>nd</sup> year;
- 2) To allow students to understand the fundamental characteristics on medicines and chemical substances including biological materials, and to learn the fundamental knowledge about typical reactions, separation methods, configuration determination methods, etc., the curriculum provides subjects on the structure and characteristics of materials besides natural medicine resources such as Organic Chemistry and Analytical Chemistry. After learning lectures about these subjects, the curriculum also provides the practical training subjects;
- 3) To allow students to understand structures of living organisms at the level of individuals, organs and cells, and to learn

Specialized Subjects in the 1<sup>st</sup> and 2<sup>nd</sup> year, and subjects including more advanced contents like Physiological Chemistry and Cellular Biology as Specialized Subjects in the 3<sup>rd</sup> year. After taking lectures on these subjects, the practical training subjects are prepared for the fall semester in the 2<sup>nd</sup> year and the spring semester in the 3<sup>rd</sup> year in order to acquire the technical skills based on knowledge;

- 4) To allow students to understand the process of pharmacological actions of medicines, and to get the fundamental knowledge about the medicine's actions to diseases, the action mechanism and in vivo fate, the curriculum provides subjects related to the actions and the in vivo fate of medicines such as Pharmacology and Biopharmaceutics as the Basic Specialized Subjects in the 1<sup>st</sup> and 2<sup>nd</sup> year, and subjects including more advanced contents like Pharmacokinetics as the Specialized Subjects in the 3<sup>rd</sup> year. After taking lectures on these subjects, the practical training subjects are prepared for the fall semester in the 2<sup>nd</sup> year and the spring semester in the 3<sup>rd</sup> year in order to acquire the technical skills based on knowledge;
- 5) To allow students to understand the basic and advanced knowledge about the pharmacotherapy, and to learn the knowledge enough to explain the pharmacotherapy to major diseases regarding all organs, the curriculum provides the lecture subjects related to the diseases and the conditions such as Clinical Pharmacy and Pharmacotherapy in the 4<sup>th</sup> year, and group learning subjects as Program-based Learning like Clinical Pharmacology in the 5<sup>th</sup> and 6<sup>th</sup> year. The Pharmacy Practice is prepared for the fall semester in the 4<sup>th</sup> year while the Clerkships in Clinical Pharmacy are provided in the 5<sup>th</sup> year. In order to cultivate these abilities, a Seminar Subject (Japanese Pharmacopoeia) is given in the 6<sup>th</sup> year;
- 6) To allow students to learn the fundamental knowledge about effects of medicine and chemical substance to the human as well as the human health with the living environments and/or global ecosystem, the curriculum provides Lecture Subjects related to the health and the environment such as Public Health Chemistry in the 2<sup>nd</sup> and 3<sup>rd</sup> year. The practical training subjects are prepared for the 3<sup>rd</sup> year in order to acquire the technical skills and the attitudes based on knowledge;
- 7) To allow students to understand the social responsibilities and duties of pharmacists, and to learn the fundamental knowledge about laws, systems and economies regarding pharmacy and drugs as well as services at pharmacies, the curriculum provides Lecture Subjects related to the pharmacist services and the pharmaceutical affairs law such as Pharmaceutical Affairs Related Laws and Pharmacoeconomics in the 4<sup>th</sup> year. The Pharmacy Practice is prepared for the fall semester in the 4<sup>th</sup> year, and the Clerkships in Clinical Pharmacy are given in the 5<sup>th</sup> year in order to acquire more practical skills and the attitudes;
- 8) To allow students to learn the fundamental knowledge required to the pharmacist services such as drug dispensing, formulation and medication counseling in order to participate in the medical care as a team member, the curriculum provides Lecture Subjects related to the formulation adjustment and the drug management like Industrial Pharmaceutics and Drug Informatics in the 3<sup>rd</sup> and 4<sup>th</sup> year. The Pharmacy Practice is prepared for the fall semester in the 4<sup>th</sup> year, and the Clerkships in Clinical Pharmacy are given in the 5<sup>th</sup> year in order to acquire more practical skills and the attitudes;
- 9) To allow students to acquire the essential abilities to find and solve problems to be active as a pharmacist who can deal flexibly with the multiple needs required as a provider of medical care, the curriculum provides Seminar Subjects: Research Practices for the fall semester in the 3<sup>rd</sup> year, subjects including basic contents: Special laboratory Works in Pharmaceutical Sciences I -II for the fall semester in the 3<sup>rd</sup> year and in the whole 4<sup>th</sup> year, and subjects including more advanced contents: Special laboratory Works in Clinical Pharmacy I III as the Specialized Study for

Graduation, well-instructing students individually;

- 10) To allow students to acquire the fundamental abilities required to keep improving themselves grasping the new information and knowledge in order to deal with progresses of pharmacy, sciences and medical cares, the curriculum provides a more professional foreign language subject: Practical English for Pharmaceutical Students in the 2<sup>nd</sup> year in addition to the Foreign Languages Subjects in the 1<sup>st</sup> and 2<sup>nd</sup> year. Besides, The Specialized Study for Graduation Subjects: Special laboratory Works in Pharmaceutical Sciences I II and Special laboratory Works in Clinical Pharmacy I III are provided from the fall semester in the 3<sup>rd</sup> year, well-instructing individually;
- 11) To allow students to understand the importance of teaching younger people and to acquire the abilities to carry it out in order to foster the next-generation pharmacists, the curriculum creates an environment in which students support the Specialized Study for Graduation of younger members in the same laboratory;

#### **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 Diploma policy. Basically, the Lecture Subjects are evaluated by written-examinations or written-examinations besides report assignments. The Practice Subjects are evaluated comprehensively by report assignments, practice notes, etc. The participatory learning subjects are evaluated by report assignments and presentation. The Seminar Subjects are evaluated by written-examinations, report assignments or presentation. The Pharmacy Practice is evaluated by written and practical skills examination. The Clerkships in Clinical Pharmacy are evaluated by practice notes and presentation. The Specialized Study for Graduation Subjects are evaluated by a rubric determined separately.

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.

- 5. Start time and acceptance conditions
  - Students select (start) this program in the first year.
- 6. Obtainable qualifications
  - a) Qualification for national examination for pharmacists

b) Technical supervisor in the office for the manufacture, import, and sale of medical devices, technical manager in a waste disposal plant, pollution control manager related to noise, dust, and vibration pollution, technical manager of environmental sanitation for buildings, and technical administrator for waterworks

7. Class subjects and their contents

For class subjects, refer to the subject table in Sheet 1. (The subject table is to be attached.)

For the details of the class subjects, refer to the syllabus that is published each academic year.

### 8. Academic achievement

The evaluation criteria are specified for each evaluation item for academic achievement, and the achievement level against these criteria is designated for each academic year.

The academic achievement, from when the student enters our university to the end of the last semester, is represented based on the average of evaluation scores for each evaluation item. The evaluation score for each subject is converted to a numerical value (S = 4, A = 3, B = 2, and C = 1) and the evaluation standard for the academic achievement is determined using these values while applying weightings.

	8 8
Achievement evaluation	Numerical conversion
S (Excellent:90 or more points)	4
A (Very good: 80 - 89 points)	3
B (Good: 70 - 79 points)	2
C (Passed: 60 - 69 points)	1
Academic achievement	Evaluation standard
Excellent	3.00 - 4.00
Very Good	2.00 - 2.99
Good	1.00 - 1.99

\* Refer to the relationship between evaluation items and evaluation criteria described in Sheet 2.

\* Refer to the relationship between evaluation items and class subjects described in Sheet 3.

\* Refer to the curriculum map in Sheet 4.

9 Graduation thesis (graduation research) (meaning, student allocation, timing, etc.)

Purpose

To enable students, through a topic of research, to acquire the capabilities for identifying something new, and solving problems based on a scientific point of view, required for comprehensively understanding pharmaceutical knowledge and contributing to the medical realm, as well as the attitude to endeavor to improve their capabilities throughout their lives. Students present the results of their research at the graduation thesis presentation assembly that is held in the middle of

December in the sixth year.

Overview

1. Attitude required for research activity

Students are expected to understand the basic philosophy and attitude required for joining in research activities in the future.

2. Studying research activity

Students are expected to experience a series of research processes to achieve the aims of the research, and to acquire the basic knowledge, skills, and attitude required for research activities, in order to become capable of performing research by themselves in the future.

3. Encounter with undiscovered things

Students are expected to experience pleasure in research activities that consists of the joy of invention and discovery in their own research.

Student allocation timing and method

Students are allocated to the laboratory in the second semester of the third year. The allocation method and requirements are defined separately.

10 Responsibility

(1) Responsibility for PDCA (plan, do, check, and act) cycle

The faculty committee of the Program of Pharmaceutical Sciences (head: Takuya Kumamoto (who is in charge of educational affairs) is engaged in the processes of "plan" and "do."

For the processes of "check" and "act", the dean of the school consults with the responsible committee and carries out the required actions while taking the results of consultations into consideration.

(2) Evaluation of the program

Perspectives for evaluation of the program

This program is evaluated from the perspectives of "educational effectiveness" and "social effectiveness." The "educational effectiveness" is evaluated by the effects of implementation of the program on the educational achievement of students, based on such things as evaluation scores, evaluation of achievement, and GPA. The "social effectiveness" is evaluated by the social effectiveness of the program.

Evaluation method (also describes relation to class evaluation)

In this program, achievement in the program is evaluated from the perspectives described above for students in the second semester of the sixth year. Also, it is evaluated for each year, taking evaluation by students into consideration by conducting questionnaires for students to evaluate the program each semester.

The "educational effectiveness" is comprehensively evaluated based on such things as the evaluation scores, evaluation of achievement, and GPA of the students who took the program.

The "social effectiveness" is evaluated based on such things as the rate of employment in hospitals, pharmacies, corporations (such as pharmaceutical companies) and public offices that have a close connection with the contents of this program. We regularly request a member of human resources staff in an organization that employs mainly students of this program to evaluate the program. In addition, we request graduates of this program to evaluate their own achievement and that of the program.

Policy and method for feedback to students

Spring Fall Spring Fall Spring Fall Spring Fall Spring Fall Spring Fall

	2	Requi red
Introduction to University Education	2	Requi red
Introductory Seminar for First-Year Students	2	Requi red
Courses in Arts and Humanities/SocialSciences	2	El ective/required
Courses in Natural Sciences	2	El ective/required
Communication Seminar I	1	
Communication Seminar II	1	
CommunicationI	1	
Communication I	1	
Communication II	1	
Communication II	1	
Basi c Forei gn Language	1	
Basic Foreign Language II	1	
Basic Foreign Language III	1	
Basic Foreign Language IV	1	
Introduction to Information and Data Sciences(Note 4)	2	Requi red
Information and Data Science Courses	2	El ecti ve/requi red
	lor2	El ecti ve/requi red
	lor2	Free elective
Psychology for Medical Care Workers(Note 5)	2	
Statistics	2	
Anatomy for understanding human being I	1	
Anatomy for understanding human being II	1	
Foundation physics for life science(Note 6)	2	
Foundation biology for life science(Note 7)	2	
Species Biology	2	
Basic Calculus	2	
Basic Linear Algebra	2	

(Note 8)

	pe	le							Year	inv	whi cl	ı the	sub	ject	is t	aker	1	
Type	Subj ect type	Lesson Style	Required No. of	Class subjects, etc.	No. of	Type of course	1st	grade						·				grad
Ę,	iubj ec	essol	credits		credits	registration		Fall		-		-		-		-		
	01	П		Practical English for Pharmaceutical Students	2		Spring	5 1 41 1	Spring	rarr	Spring	raii	Spring	rarr	Spring	rarr	Spring	ran
				Introduction to Pharmaceutical Sciences	2													┢──
				General Chemistry	2													┢──
				Pharmaceutical Analysis	2													┢──
																		-
				Nuclear Pharmacy Organic Chemistry I	2													<u> </u>
				Organi c Chemistry I	1													-
				Biochemistry I	2													
				Biochemistry II	2								-					
	cts			Biological Chemistry III	2													⊢
	Basic Specialized Subjects			Public Health Chemistry I	2		<u> </u>						-					
	d Sı	re		Basic Kampo Medicine	2													⊢
	i ze	Lecture	43	Mi crobi ol ogy	2	Requi red												-
	ci al	Γ		Public Health Chemistry II	2													-
	Spe			Pharmaceutical Physical Chemistry	2													-
	sic			Bio-Analytical Science	2													⊢
	Ba			Natural Products Chemistry	2													-
				Biological Chemistry IV	2													-
				Biopharmaceutics	2													-
				Biochemistry V	2			-					-					
				Organic Chemistry	1			-					-					
				Organi c Chemistry	1													
ects				Pharmacol ogy I	2													
ubje				AnOutline of Pathology	- 1													-
on S				Total (Basic Specialized Subjects)	43		4	10	16	12			1					-
Specialized Education Subjects				Japanese Pharmacopoei a	2		-						-					
Educ		<u>د</u>	4	Research Practice	1	Requi red												Γ
ed I		mi nar		Research Practice	1													
aliz		Sen	(2)	Practice for clinical food science	2	Free elective							2					-
eci				Total (Seminar)	6						1	1	2				2	
$_{\rm Sp}$			(2)	Clinical food science	2	Free elective							2					Γ
				Herbal medicine & Kampo medicine	2													
				Pharmacoki neti cs	2			1										
				Biochemistry VI	2													
				Biophysical Chemistry	2													
	τ <b>ο</b>			Antibiotics and Drug resistance	2													
	ect:			Physiological Chemistry	2													1
	Specialized Subjects			Organic Chemistry III	2													
	red			Medicinal Organic Chemistry	2													
	al i z			Pharmacol ogy II	2													
	eci ;	ure		Industrial Pharmaceutics	2													
	Sp	Lecture	62	Cell Motility	2	Requi red												
		Π		Genetic Engineering	2													
				Organic Chemistry IV	2			1	l									Γ
				Public Health Chemistry III	2			1										
				Biological Statistics	2			1										
				Pharmacology III	2			1										
				Pharnacol ogy I	2			1										
				Clinical Pharmacy	2			1										
				Clinical Medicine and Pharmacotherapy I	2			1										
				Pharmacotherapy A	2			1										
				AnOutline of Immunology														1

### Table of Registration Standards for Liberal Arts Education Subjects

Program of Pharmaceutical Sciences

Type Subj ect type Lesson Styl e par inba

Spring Fall Spring Fall Spring Fall Spring Fall Spring Fall Spring Fall

# Sheet 2

### Academic achievements of Pharmaceutical Sciences Program Relationships between the evaluation items and evaluation criteria

		Academic achievements		Evaluation criteria	
		Evaluation items	Excellent	Very Good	Good
	(1)	understanding and knowledge of natural science and social science.	<ol> <li>Being able to clearly explain from medical point of view about general education subjects along with natural science and social science.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to clearly explain about general education subjects along with natural science and social science.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain about general education subjects along with natural science and social science.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
-	(2)	physical characters and reaction of medicine and other inorganic and organic compounds. ali	inorganic and organic compounds. 2. The learning attainment level is calculated as an	structure, physical characteristics and reaction of	<ol> <li>Being able to explain about the basic structure, physical characteristics and reaction of medicine and inorganic and organic compounds.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
anding		homeostasis and the ability to adjust to the environment. ali	<ol> <li>Being able to clearly explain from medical point of view about maintenance mechanism of ecosystem homeostasis and dynamic adjustment.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to clearly explain about maintenance mechanism of ecosystem homeostasis and dynamic adjustment.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain about maintenance mechanism of ecosystem homeostasis and dynamic adjustment.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
uge and Understanding		treatment for major diseases related to various organ. ali	organs from medical point of view. 2. The learning attainment level is calculated as an average evaluation of grades based on designated	<ol> <li>Being able to comprehensively explain appropriate medication to major diseases relating to various organs.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain appropriate medication to major diseases relating to various organs.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
INTIOMICABO	(5)	preservation of the eco system and life environment, causes of environmental pollutants, and their influences on humans. ali	components of environmental contamination, and human effects. 2. The learning attainment level is calculated as an	<ol> <li>Being able to clearly explain about ecosystem, preservation of living environment, components of environmental contamination, and human effects.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain from about ecosystem, preservation of living environment, components of environmental contamination, and human effects.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
	(6)		1. Being able to comprehensively explain from medical point of view about the logical analysis of pharmacokinetics to understand medical effects and ide effec an i a i el	1. Being able to comprehensively explain the logical analysis of pharmacokinetics to understand medical effec and ide effec an i a i el 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.	<ol> <li>Being able to explain the logical analysis of pharmacokinetics to understand medical effects and ide effec an i a i el</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
	(7)	relating to medication. ali	team. 2. The learning attainment level is calculated as an	<ol> <li>Being able to make communication with other medical staff on medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain to other medical staff on medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>

		Academic achievements		Evaluation criteria	
		Evaluation items	Excellent	Very Good	Good
anding		0		The level of achievement will be assessed based on a formula that includes the average points calculated based on the student's TOEIC score and an evaluation in class. 70% is minimum.	The level of achievement will be assessed based on a formula that includes the average points calculated based on the student's TOEIC score and an evaluation in class.
e and Understanding	(9)		<ol> <li>Being able to explain basic medical effects relating to chemical structures of medicine.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to enumerate and explain basic medical effects and chemical structures of medicine.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain basic medical effects and chemical structures of medicine.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
Knowledge	(10)		<ol> <li>Being able to enumerate and explain major diseases assumed from abnormal clinical scores.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to enumerate and explain basic points of major diseases assumed from abnormal clinical scores.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain basic points of major diseases assumed from abnormal clinical scores.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
	(1)	Abilities of collecting necessary information of drug treatment her/him self. ali	<ol> <li>Being able to collect necessary information on medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to enumerate and explain basic points necessary for medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain basic points necessary for medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
		poisoning, emergency procedure and detoxication of chemical substances. ali	<ol> <li>Being able to explain and search for measures on poisoning, targeted organs, poisoning symptoms, emergency treatments and detoxification of chemical substances.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to search for measures on poisoning, targeted organs, poisoning symptoms, emergency treatments and detoxification of chemical substances.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain search measures on poisoning, targeted organs, poisoning symptoms, emergency treatments and detoxification of chemical substances.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
Abilities and Skills	(3)	effects) of madicine.	1. Being able to enumerate basic matters relating to measures to decrease harmful effects (side effects) of medicine and conduct ways of solution. 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.	<ol> <li>Being able to enumerate basic matters relating to measures to decrease harmful effects (side effects) of medicine and explain ways of solution.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to enumerate basic matters relating to measures to decrease harmful effects (side effects) of medicine and explain them.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
A	(4)	To be able to handle major analysis methods written in the Japanese Pharmacopoeia. ali	Pharmacopoeia. 2.The learning attainment level is calculated as an	<ol> <li>Being able to analyze representative official medicine of Japanese Pharmacopoeia.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to analyze representative official medicine of Japanese Pharmacopoeia.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
	(5)	synthesis in order to chemically	<ol> <li>Being able to plan organic synthesis to have chemical conversion into desired compounds including medicine from compounds hard to get and synthesize them.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to conduct organic synthesis to have chemical conversion into desired compounds including medicine from compounds hard to get.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	eing able o e ba ic echni e of o ganic synthesis to have chemical conversion into desired compounds including medicine from compounds hard to get. 2.The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.

		Academic achievements		Evaluation criteria	
		Evaluation items	Excellent	Very Good	Good
	(6)	Using available compounds as starting materials, to be able to handle organic synthesis in order to chemically transform medicine into a target substance. ali	including medicine from compounds hard to get and synthesize them. 2.The learning attainment level is calculated as an	1. Being able to conduct organic synthesis to have chemical conversion into desired compounds including medicine from compounds hard to get. 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.	eing able o e ba ic echni e of o ganic synthesis to have chemical conversion into desired compounds including medicine from compounds hard to get. 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.
and Skills	(7)		2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.	2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.	eing able o cond c ba ic echni e o measure representative drug blood level. 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.
Abilities and	(8)	The ability and skills of communication with medical teams relating to medication. ali	medical staff on medication as a member of medical team. 2. The learning attainment level is calculated as an	<ol> <li>Being able to make communication with other medical staff on medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain to other medical staff on medication.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
	(9)	The ability and skills to appropriately deal with contraindication or inappropriate treatments of medicine. ali	medicine by themselves. 2. The learning attainment level is calculated as an average evaluation of grades based on designated	<ol> <li>Being able to appropriately deal with contraindications or inappropriate prescription of medicine.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to explain appropriate measures to contraindications or inappropriate prescription of medicine.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
Attitudes	(1)	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	to take the appropriate mind and make appropriate communication not only with ailing people but with patients and other medical staff as a member of a medical team. 2. The learning attainment level is calculated as an average evaluation of grades based on designated	<ol> <li>Being aware that a pharmacist is a professional relating to human life, Bing able to have an attitude to take the appropriate mind and make communication not only with ailing people but with patients and other medical staff as a member of a medical team.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being aware that a pharmacist is a professional relating to human life, having had an attitude to take the appropriate mind and make communication not only with ailing people but with patients and other medical staff as a member of a medical team.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
A			pharmacist not only from medical teams but also from national people. 2. The learning attainment level is calculated as an average evaluation of grades based on designated	<ol> <li>Being able to always keep the existence of patients and try to take action to become a reliable pharmacist not only from medical teams but also from national people.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to always keep the existence of patients and explain necessary matters to become a reliable pharmacist not only from medical teams but also from national people.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>

Academic achievements		Evaluation criteria	
Evaluation items	Excellent	Very Good	Good
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. ali	1. Being able as a pharmacist or medical researcher to analyze effects of various kinds of chemical substances on earth to humans, generally estimate ways of survival of humans, actively try to find the solution of the issues and advise the next generation. 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.	<ol> <li>Being able as a pharmacist or medical researcher to analyze effects of various kinds of chemical substances on earth to humans and try to find solution for survival of humans, and advise the next generation.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	a ing ac i ed an a i de a a pha maci o medical researcher to analyze effects of various kinds of chemical substances on earth to humans and try to find solution for survival of humans, and being able to advise the next generation. 2. The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.
<ul> <li>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.</li> <li>(2) The knowledge and understanding to have communication not only with ailing people but with other medical staff in a medical team. ali</li> </ul>	<ol> <li>Being aware that a pharmacist is a professional relating to human life, being able to have an attitude to take the appropriate mind and make appropriate communication not only with ailing people but with patients and other medical staff as a member of a medical team.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being aware that a pharmacist is a professional relating to human life, Bing able to have an attitude to take the appropriate mind and make communication not only with ailing people but with patients and other medical staff as a member of a medical team.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being aware that a pharmacist is a professional relating to human life, having had an attitude to take the appropriate mind and make communication not only with ailing people but with patients and other medical staff as a member of a medical team.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>
The research ability: the ability to select issues to be solved in the professional field of pharmacist and (3) carry out measures and research to solve the issues. ali	<ol> <li>Being able to select issues to be solved in the professional area of pharmacist, plan the ways of solution by themselves and conduct the research.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 80%.</li> </ol>	<ol> <li>Being able to select issues to be solved in the professional area of pharmacist and conduct ways or research to solve the issues.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 70%.</li> </ol>	<ol> <li>Being able to conduct measures or research to solve issues to be solved in the professional area of pharmacist.</li> <li>The learning attainment level is calculated as an average evaluation of grades based on designated formulae. The standard is more than 60%.</li> </ol>

Role of liberal arts education in this major program

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### Relationships between the evaluation items and class subjects(Program of Pharmaceutical Sciences)

	Weighte values o evaluati items ir the sub	d Weighted f values of on evaluation items ect	Weighted W values of va evaluation ev items in ite the subject	eighted Weig lues of value aluation evalue ems items the s	ghted Weighte les of values o luation evaluati is in items subject	d Weighted W f values of va on evaluation ev items in it the subject	Veighted Weig alues of value valuation evalu ems items the s	hted Weighte s of values o ation evaluatio i in items ubject	d Weighted We values of val n evaluation eva items in ite the subject	ighted Weig ues of value iluation evalu items the s	thed Weighted s of values of action evaluation s in items ubject	Weighted W values of va evaluation ev items in it the subject	/eighted Weig alues of value valuation evalue ems item the s	ghted Weighte les of values of uation evaluatio is in items subject	d Weighted V f values of v on evaluation e items in it the subject	Weighted We values of value evaluation eva tems iter the	eighted Weighted lues of values of aluation evaluatio ms in items e subject	ed Weighted of values of on evaluation items in the subject	Weighted We values of val evaluation eva items ite the	eighted Weightoues of values of values of evaluation evaluations in items e subject	ed Weighted W of values of values of valuation evaluation evaluation it items in it the subject	Veighted We alues of valu valuation eva iter the	eighted Weighte lues of values o aluation evaluati ms in items e subject	d Weighted We f values of val on evaluation eva items in ite the subject	ighted Weighte ues of values of luation evaluati ns items in the subj	ed Weighted of values of on evaluation items eect	Weighted We values of val evaluation eva items in ite the subject	eighted Weighted lues of values of aluation evaluatio ms items in the subje	d Weighted values of n evaluation items	Weighted W values of v evaluation e items in it the subject	Weighted W values of v evaluation e tems it t	Neighted Weig values of valu evaluation evalu tems in item he subject	ghted Weight es of values uation evaluar s items i the sul	ed Weighte of values o cion evaluation n items oject	d Weighted values of evaluation items in the subject	Weighted values of evaluation items	Veighted We values of valu valuation eva tems in item he subject	eighted lues of aluation ms	
Liberal Arts Education Peace Science Courses 2 Required 3-27	2T 100	1																																					100
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Liberal Arts Education Introductory Seminar for First-Year Students 2 Required 1-17	ΙT																													20	1	20	1 20	1	20	1	20	1	100
Liberal Arts Education Area Courses 8 Elective/required 1	2 100	1																																					100
Liberal Arts Education Communication Seminar 2 Required $\begin{array}{c} 1-17\\ 2-37\end{array}$	T BT											80	1														20	1											100
Liberal Arts Education Communication 2 Required 1												80	1														20	1											100
Liberal Arts Education Communication 2 Required 2												70	1														30	1											100
Liberal Arts Education Non-English Foreign Languages $0$ Free elective $1$ 2	2											100	1																										100
Liberal Arts Education Information and Data Science Courses $2$																																							

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Subject		Type of course		(1) Weighted Weig	ohted Wei	(2) ohted Weig	ohted We	(3) eighted Weig	ohted Weig	(4) Nighted Weighte	ed Weighted	(5) Weighted	(6 Weighted		(7) eighted We	ohted Wei	(8) ighted Weig	hted Weig	(9) Ited Weighte	d Weighted	10) Weighted	(1) Weighted W	Veighted W	(2) Veighted Weigh	ted Weighte	(3) ed Weighter	1 Weighted	(4) Weighted	(5 Weighted	) Weighted W	(6) Neighted	eighted Wei	(7)	ohted Weioł	(8) ted Weighte	d Weighted	(9) Weighted	( Weighted	1) Weighted	(2 Weighted	2) Weighted	(1) Neighted W	) Neighted V	(2) Weighted	vighted Weigh	(3) ted Weighte	values c
Subject Classification	Subject Name	Credits registrat	i Grade	Weighted Weig values of value evaluation evalu	es of valu uation eval	es of value uation evalu	les of val	eighted Weig lues of value valuation evalue	es of valu uation eval	eighted Weighted ues of values of aluation evaluation	of values of tion evaluation	values of evaluation	values of version evaluation	values of val	lues of valuation eva	es of valu uation eva	ues of value luation evalu	s of value ation evalue	s of values of evaluation	of values of evaluation	values of evaluation	values of valuation ev	alues of valuation ev	Veighted Weigh alues of values valuation evalua	of values of tion evaluati	of values of ion evaluatio	d Weighted values of evaluatio	values of evaluation	Weighted V values of v evaluation e	values of valuation e	values of valuation ev	lues of valu valuation eval	les of value luation evalue	es of values uation evalua	of values o tion evaluation	f values of on evaluation	Weighted values of evaluation	values of evaluation	values of evaluation	Weighted values of evaluation	values of evaluation	values of valuation evaluation	Weighted W values of weighted	evaluation eva	eighted Weighted lues of values of aluation evaluat	of values of evaluation	of evaluation evaluation evaluation
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Specialized Education	Pharmacotherapy A	2 Required	1 7- T							20 1										20	1			20 1	20	1										20	1										100
Specialized Education	AnOutline of Immunology	2 Required	ł 7-2T					50	1	50 1																																					100
Specialized Education	Clinical Medicine and Pharmacotherapy II	2 Required	l 8-3T					10	1	10 1			10	1	10	1		1	0 1	10	1												10	1 1	) 1	10	1	5	1	5	1						100
Specialized Education	Pharmaceutical Affairs Related Laws	2 Required	d 7-2T			20	1				20	1	20	1	10	1											10	1	10	1								10	1								100
Specialized Education	Clinical Pharmacology A	2 Required	l 8-3T					10	1	10 1			10	1	10	1		1	0 1	10	1												10	1 1	) 1	10	1	5	1	5	1						100
Specialized Education	Pharmacotherapy B	2 Required	d 7-1T					10	1	10 1			10	1	10	1		1	0 1	10	1												10	1 1	) 1	10	1	5	1	5	1						100
Specialized Education	Drug Informatics	2 Required	l 8-3T										25	1	25	1	25	1				25	1																								100
Specialized Education	Clinical Medicine and Pharmacotherapy III	2 Required	l 8-3T					10	1	10 1			10	1	10	1		1	0 1	10	1												10	1 1	) 1	10	1	5	1	5	1						100
Specialized Education	Clinical Pharmacology	2 Required	l 11-1T					10	1	10 1			10	1	10	1		1	0 1	10	1												10	1 1	) 1	10	1	5	1	5	1						100
Specialized Education	Clinical Pharmacology	2 Required	l 11-1T					10	1	10 1			10	1	10	1		1	0 1	10	1												10	1 1	) 1	10	1	5	1	5	1						100
Specialized Education	Pharmacoeconomics	2 Required	l 7-1T										50	1								50	1																								100
Specialized Education	Clinical Evaluation	2 Required	l 8-3T																			100	1																								100
Specialized Education	Experiments in Analytical Chemistry	1 Required	ł 4															10	00 1																												100
Specialized Education '	Training of Physical Chemistry	1 Required	1 4	50	1	50	1																																								100
Specialized Education	Experiments in Organic Chemistry	1 Required	1 4			50	1																								50	1															100
Specialized Education	Experiments of Cellular and Molecular Biology	1 Required	1 4																																										100	0 2	100
Specialized Education	Experiments of Biological Chemistry	1 Required	1 4																								100	1																			100
Specialized Education	Experiments of Pharmacognosy	1 Required	1 5																								100	1																			100
Specialized Education	Experiments of Microbial Chemistry	1 Required	1 5					30	1									3	0 1								20	1																	20	0 1	100
Specialized Education	Pharmacology Practice	1 Required	1 5																														100	1													100
Specialized Education	Practice of Pharmaceutics	1 Required	1 5																														100	1													100
Specialized Education	Experiments of Public health Chemistry	1 Required	1 5																																										100	00 1	100
Specialized Education	Pharmacy Practice	3 Required	8							10 1												10	1						10	1				1	) 1	10	1	20	1	20	1			10	1		100
Specialized Education	Clerkship in Clinical Pharmacy	10 Required	ł 9 10																																	20	3	20	3	20	3			40	3		100
Specialized Education	Clerkship in Clinical Pharmacy	10 Required	l 9 10																																	20	3	20	3	20	3			40	3		100
Specialized Education	Special laboratory Works in Pharmaceutical Sciences I	2 Require	l 68			10	1															10	1								10	1	10	1								30	1		30	0 1	100
Specialized Education	Special laboratory Works in Pharmaceutical Sciences	2 Required	68			10	1															10	1								10	1	10	1								30	1		30	0 1	100
Specialized Education	Special laboratory Works in Clinical Pharmacy	2 Required	l 9 12																			15	1										15	1								35	1		35	5 1	100
Specialized Education	Special laboratory Works in Clinical Pharmacy	2 Required	9 12																			15	1										15	1								35	1		35	5 1	100
Specialized Education	Special laboratory Works in Clinical Pharmacy	2 Required	9 12																			15	1										15	1								35	1		35	5 1	100
	Total	I		360	6 1	.380	27	1430 3	31 2	260 15	220	3	540	20	125	11	455	8 3	00 19	240	14	415	19	55 3	195	7	410	8	30	3	390	11	365	17 19	0 14	170	17	230	22	220	21	265	11	170	12 515	.5 17	9020

## Curriculum Map of Pharmaceutical Sciences Program

	Academic achievements	1st	grade	2nd	grade	3rd	grade	4th	grade	5th g	rade	6th g	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
	To have a wide range of knowledge of	Liberal Arts Education Subjects GPA	A Liberal Arts Education Subjects GPA		Training of Physical Chemistry		!		!	1 0 <u>i</u>			!
	liberal arts as well as basic understanding and knowledge of natural science and	Introduction to University Education	Area Courses		_								-
	social science.	Area Courses	Introduction to Pharmaceutical Sciences										-
		General Chemistry											-
	The basic knowledge and	Foundation Courses	Foundation Courses	Pharmaceutical Physical Chemistry	Basic Kampo Medicine	Biophysical Chemistry	Special laboratory	Works in Pharmaceu	itical Sciences I				Japanese Pharmacopoeia
	understanding of basic structures, physical characters and reaction of	Organic Chemistry A	Organic Chemistry A	Nuclear Pharmacy(	) Training of Physical Chemistry	Medicinal Organic Chemistry	Special laboratory	Works in Pharmaceu	tical Sciences				_
	medicine and other inorganic and organic	Organic Chemistry B	Organic Chemistry B	Bio-Analytical Science	Experiments in Organic Chemistry	Research PracticeA	Industrial Pharmaceutics	Pharmaceutical Affairs Related Laws					_
	compounds.	General Chemistry		Natural Products Chemistry	Organic Chemistry	Herbal medicine & Kampo medicine	Research PracticeB						-
	quality			Organic Chemistry		Pharmacology III	Pharmacology IV					_	-
	Knowledge and understanding of the biological maintenance system of	Foundation Courses	Foundation Courses	Biological Chemistry III	Pharmacology I	Physiological Chemistry	Cell Motility	AnOutline of Pathology	Clinical Pharmacology A			Clinical Pharmacology	Japanese Pharmacopoeia
	homeostasis and the ability to adjust to		Biochemistry I	Biological Chemistry IV	Biochemistry V	Antibiotics and Drug resistance	Genetic Engineering	Research PracticePracticer gr P gichP	Pl r r liñochemistry₩ u D	u l C	r G		
	the environment.												-
	quality												-
													-
												_	-
	Fundamental knowledge understanding	i			Basic Kampo Medicine	Pharmacology III	Pharmacology IV	AnOutline of Pathology	Pharmacy Practice			Clinical Pharmacology	
	about proper drug treatment for major		_		basic Kairpo Medicine	Fhathacology III	Fhamacology IV	Pharmacotherapy A	Clinical Pharmacology A			Clinical Pharmacology	
	diseases related to various organ.							Clinical Pharmacy	Clinical Medicine and Pharmacotherapy III			Children Phanhacology	_
	quality							Clinical Medicine and Pharmacotherapy I	Clinical Medicine and Pharmacotherapy II				-
								AnOutline of Immunology					-
ing								Pharmacotherapy B					-
ndir	Understanding concerning preservation	l		Public Health Chemistry I				Pharmaceutical Affairs Related Laws					
	of the eco system and life environment,			Public Health Chemistry II									-
~	causes of environmental pollutants, and their influences on humans.												-
d U	quality												-
an									<u> </u>				-
Sdog	Knowledge and understanding about				Pharmacology I	Research PracticeA	Research PracticeB	Clinical Pharmacy	Drug Informatics			Clinical Pharmacology	
owle	rational analyses of pharmacokinetics in order to to understand quantitatively				Biopharmaceutics	Pharmacokinetics	Public Health Chemistry III	Clinical Medicine and Pharmacotherapy I	Clinical Pharmacology A			Clinical Pharmacology	
Kn	order to to understand quantitatively madicinal effects or side effects.				Basic Kampo Medicine		Biological Statistics	Pharmacotherapy B	Clinical Medicine and Pharmacotherapy II				-
	quality				Pharmacology II			Pharmaceutical Affairs Related Laws	Clinical Medicine and Pharmacotherapy III				-
								Pharmacoeconomics					
	The knowledge and understanding of communication with medical teams		Introduction to Pharmaceutical Sciences					Clinical Pharmacy	Drug Informatics			Clinical Pharmacology	_
	relating to medication.							Clinical Medicine and Pharmacotherapy I	Clinical Pharmacology A			Clinical Pharmacology	
	quality						_	Pharmacotherapy B	Clinical Medicine and Pharmacotherapy II				
								Pharmaceutical Affairs Related Laws	Clinical Medicine and Pharmacotherapy III	k ksi			
	Improving English sources have to												
	Improving English comprehension to acquire capacity of medical or chemical												
	English.												
	The ability of considering basic												
	pharmacological effects of medicine to												
	chemical structure.												
	quality												
	10 Abilities skills of citing speculated							Pharmacotherapy A	Clinical Pharmacology A			Clinical Pharmacology	Japanese Pharmacopoeia
	major diseases from aberration of clinical							Research PracticePractice for clinical food science	Clinical Medicine and Pharmacotherapy II			Clinical Pharmacology	
	test values. qualities							Clinical food science	Clinical Medicine and Pharmacotherapy III			<u>d</u> /	
	quanteres							Clinical Pharmacy					
								Clinical Medicine and Pharmacotherapy I					
								Pharmacotherapy B					
									-				

# Sheet 4

### Curriculum Map of Pharmaceutical Sciences Program

Academic achievements	1st	grade	2nd	grade	3rd	l grade	4th	grade	5th gi	rade	6th	grade
Evaluation items		Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester		Fall semester
	Spring semester	Information and Data Science Courses	Spring semester	Pharmacology I	Research PracticeA	1 all sellester	Spring semester	I all semester	Spring semester	I'all Selliester	Spring semester	1 all semester
	niomatoriali Data Scritte Couses	Introduction to Pharmaceutical Sciences		Microbiology	Antibiotics and Drug resistance							
				Pharmacology II	Pharmacology III	Research PracticeB	Pharmacoeconomics	Drug Informatics				
				Thamacology II	Thanhacology in	Pharmacology IV		Clinical Evaluation				
								Pharmacy Practice				
				Pharmacology I			Research PracticePractice for clinical food science					
				112010000000000000000000000000000000000			Pharmacotherapy A					
							15					
		Introduction to Pharmaceutical Sciences		Biopharmaceutics	Pharmacokinetics	<b>Biological Statistics</b>	Pharmacotherapy A					
				Pharmacology II	Antibiotics and Drug resistance							
		Pharmaceutical Analysis	Nuclear Pharmacy(	) Experiments of Biological Chemistry	Experiments of Pharmacognosy		Pharmaceutical Affairs Related Laws					Japanese Pharmacopoeia
			Bio-Analytical Science		Experiments of Microbial Chemistry							
							Pharmaceutical Affairs Related Laws	Pharmacy Practice				Japanese Pharmacopoeia
	Organic Chemistry A	Organic Chemistry A	Organic Chemistry	Experiments in Organic Chemistry	Research PracticeA							
	Organic Chemistry B	Organic Chemistry B		Organic Chemistry								
						Research PracticeB						
					Research PracticeA							
					Practice of Pharmaceutics							
					Pharmacology Practice	Research PracticeB	Clinical Pharmacy	Clinical Pharmacology A				
							Clinical Medicine and Pharmacotherapy I	Clinical Medicine and Pharmacotherapy II			Clinical Pharmacology	
							Pharmacotherapy B	Clinical Medicine and Pharmacotherapy III			Clinical Pharmacology	
	Communication Seminar	Communication Seminar		Practical English for Pharmaceutical Students			Clinical Pharmacy	Pharmacy Practice			Clinical Pharmacology	
	Communication	Communication					Clinical Medicine and Pharmacotherapy I	Clinical Pharmacology A			Clinical Pharmacology	
		Introduction to Pharmaceutical Sciences					Pharmacotherapy B	Clinical Medicine and Pharmacotherapy II				
The ability and skills to appropriately				Basic Kampo Medicine			Clinical Pharmacy	Clinical Medicine and Pharmacotherapy III	Clorkshin in Clinica	Dharmou	Clinical Pharmacology	
deal with contraindication or inappropriate	2			Basic Itaripo Ivieucilie			Clinical Medicine and Pharmacotherapy I	Pharmacy Practice Clinical Pharmacology A(	Clerkship in Clinica Clerkship in Clinica		Clinical Pharmacology	
treatments of medicine.							Pharmacotherapy B	Clinical Medicine and Pharmacotherapy II		a i iku iiku y	- manual Francesology	
quality							Pharmacotherapy A	Clinical Medicine and Pharmacotherapy III				
Self- betterment of character formation	Introductory Seminar for First-Year Students	Health and Sports Courses					Clinical Pharmacy	Pharmacy Practice	Clerkship in Clinica	al Pharmacy	Clinical Pharmacology	
as a medical professional : the appropriate	Information and Data Science Courses	Information and Data Science Courses					Clinical Medicine and Pharmacotherapy I	Clinical Pharmacology A	Clerkship in Clinica		Clinical Pharmacology	
action and attitude being aware of that a pharmacist is a professional relating to	Health and Sports Courses	Social Cooperation Courses					Pharmacotherapy B	Clinical Medicine and Pharmacotherapy II				-
human life. The knowledge and	Introduction to University Education	Introduction to Pharmaceutical Sciences					Pharmaceutical Affairs Related Laws	Clinical Medicine and Pharmacotherapy III				
understanding to have communication not only with ailing people but with other	Social Cooperation Courses								-			
a medical staff in a medical team.												
medical staff in a medical team. quality												
Ability to be a pharmacist who is relied	Introductory Seminar for First-Year Students	Health and Sports Courses					Clinical Pharmacy	Pharmacy Practice			Clinical Pharmacology	
	Information and Data Science Courses	Information and Data Science Courses					Clinical Medicine and Pharmacotherapy I	Clinical Pharmacology A			Clinical Pharmacology	
	Health and Sports Courses	Social Cooperation Courses					Pharmacotherapy B	Clinical Medicine and Pharmacotherapy II				
	Introduction to University Education	Introduction to Pharmaceutical Sciences						Clinical Medicine and Pharmacotherapy III				
	Social Cooperation Courses											

# Sheet 4

### Curriculum Map of Pharmaceutical Sciences Program

Academic achievements		1st grade		2nd grade		3rd grade		
	Evaluation items	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring ser
-	Comprehensive problem solving ability and educational ability: Concerning the influences caused by numerous chemical	Introductory Seminar for First-Year Students	Social Cooperation Courses		•	Research PracticeA	Special laboratory	Works in Pha
		Introduction to University Education	Introduction to Pharmaceutical Sciences				Special laboratory	Works in Pha
	substances existing on the earth, to be	Social Cooperation Courses					Research PracticeB	
	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							
	S							
	as a medical professional : the appropriate $\nabla$		Social Cooperation Courses					
		Information and Data Science Courses	Information and Data Science Courses			_		
	pharmacist is a professional relating to	Introduction to University Education	Introduction to Pharmaceutical Sciences					
	human life. The knowledge and	Social Cooperation Courses						
	built understanding to have communication not conly with ailing people but with other							
	5 medical staff in a medical team.			_		_		
	quality			_		_		
							a	
	The research ability: the ability to select issues to be solved in the professional field of pharmacist and carry	Introductory Seminar for First-Year Students	Social Cooperation Courses	Nuclear Pharmacy(	Experiments of Cellular and Molecular Biology	Research PracticeA	Special laboratory	
		Information and Data Science Courses	Information and Data Science Courses			Experiments of Public health Chemistry	Special laboratory	Works in Pha
	out measures and research to solve the	Introduction to University Education	Introduction to Pharmaceutical Sciences			Experiments of Microbial Chemistry	Research PracticeB	
	issues. quality	Social Cooperation Courses						
	1					Liboral Arts Education Subject	ts Basic Specialized Subjects	Specialized Education
	Fundamental qualities required for phar	macists				Liberal Arts Education Subject	a Dasie Specialized Subjects	Specialized Education
	Attitude as a pharmacist	1						
	Viewpoint oriented to patients and on Communication skills	dinary citizens						
	Participation in team medical care							
	Basic scientific knowledge and skills	naatharan						
	Practical capabilities regarding pharm	acomerapy						

- Practical capabilities for health and medical care in the local community Research ability Self- improvement Educational skills

ion Subjects Graduation Thesis Clerkship in Clinical Pharmacy Required Elective/required Free elective

# Sheet 4

4th grade	5th g	rade	6th grade				
mester Fall semester	Spring semester	Fall semester	Spring semester	Fall semester			
armaceutical Sciences I	Specia						
armaceutical Sciences	Specia						
	Specia						
		1 - 1					
Pharmacy Practice	Clerkship in Clinica	•					
	Clerkship in Clinic	al Pharmacy					
			·				
armaceutical Sciences I	Specie	al laboratory Works i	n Clinical Pharmecy				
armaceutical Sciences	Special laboratory Works in Clinical Pharmacy Special laboratory Works in Clinical Pharmacy						
		Special laboratory Works in Clinical Pharmacy					
	opeen		in channel i rearried y				