CURICULUM BOOK

PHARMACY STUDY PROGRAM
FACULTY OF HEALTH SCIENCES
UIN SYARIF HIDAYATULLAH JAKARTA

DOCUMENT
Higher Education Curriculum
Bachelor of Pharmacy Study Program

Study Program : **Bachelor of Pharmacy**
Faculty : **Health Sciences**
University : **UIN Syarif Hidayatullah Jakarta**

MINISTRY OF RELIGION
UIN SYARIF HIDAYATULLAH JAKARTA
Year 2023

KEPUTUSAN DEKAN FAKULTAS ILMU KESEHATAN
UIN SYARIF HIDAYATULLAH JAKARTA
NOMOR : 73 TAHUN 2021

TENTANG
KURIKULUM
PROGRAM STUDI FARMASI
FAKULTAS ILMU KESEHATAN
UIN SYARIF HIDAYATULLAH JAKARTA
TAHUN AKADEMIK 2021/2022

Menimbang :

a. bahwa dalam rangka mengembangkan dan meningkatkan kualitas mahasiswa Program Studi Farmasi Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta Tahun Akademik 2021/2022 dalam bidang akademik dipandang perlu menetapkan Kurikulum Program Studi Farmasi;

b. Bahwa data data yang tercantum dalam lampiran ini dipandang memenuhi syarat menjadi Kurikulum Program Studi Farmasi Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta;

c. bahwa berdasarkan huruf a perlu ditetapkan Keputusan Dekan.

Mengingat :

1. Undang – Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional ;
2. Undang – Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;
3. Peraturan Pemerintah Nomor 37 Tahun 2009 Tentang Dosen;
4. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi;
5. Peraturan Menteri Agama Nomor 6 Tahun 2013 tentang Organisasi dan Tata Kerja UIN Syarif Hidayatullah Jakarta;
6. Keputusan Menteri Agama Nomor 17 tahun 2014 tentang Statuta UIN Syarif Hidayatullah Jakarta;
7. Keputusan Menteri Keuangan Nomor: 42/KMK.05/2008 tentang Penetapan UIN Syarif Hidayatullah Jakarta pada Departemen Agama RI sebagai Instansi Pemerintah yang menerapkan pengelolaan keuangan Badan Layanan Umum.
8. Peraturan Menteri Pendidikan dan Kebudayaan Nomor 3 Tahun 2020 Tentang Standar Nasional Pendidikan Tinggi

MEMUTUSKAN

Menetapkan : KEPUTUSAN DEKAN FAKULTAS ILMU KESEHATAN UIN SYARIF HIDAYATULLAH JAKARTA TENTANG KURIKULUM PROGRAM STUDI FARMASI FAKULTAS ILMU KESEHATAN UIN SYARIF HIDAYATULLAH JAKARTA TAHUN AKADEMIK 2021/2022

Pertama : Menetapkan yang tercantum dalam lampiran keputusan ini sebagai Kurikulum Program Studi Farmasi Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta Tahun Akademik 2021/2022.

Kedua : Keputusan ini berlaku sejak tanggal ditetapkan, dengan ketentuan apabila terdapat kekeliruan dalam Keputusan ini akan diperbaiki sebagaimana mestinya.

DITETAPKAN DI : JAKARTA
PADA TANGGAL : 9 Agustus 2021

DEKAN,

Dr. apt. Zilhadia, M.Si.
NIP. 19730822 200801 2 007

Tembusan :
1. Rektor;
2. Wakil Rektor Bidang Akademik;
3. Kepala Biro AAKK
   UIN Syarif Hidayatullah Jakarta

KEPUTUSAN DEKAN FAKULTAS ILMU KESEHATAN
UIN SYARIF HIDAYATULLAH JAKARTA
NOMOR: 90 TAHUN 2023

TENTANG
PENGESAHAN PERUBAHAN PROFIL LULUSAN DAN CAPAIAN PEMBELAJARAN LULUSAN (CPL)
KURIKULUM PROGRAM STUDI FARMASI TAHUN 2021
FAKULTAS ILMU KESEHATAN
UIN SYARIF HIDAYATULLAH JAKARTA

Menimbang :
a. bahwa dalam rangka mengembangkan dan meningkatkan kualitas mahasiswa Program Studi Farmasi Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta dalam bidang akademik dipandang perlu menetapkan Pengesahan Perubahan Profil Lulusan dan Capaian Pembelajaran Lulusan (CPL) Kurikulum Program Studi Farmasi Tahun 2021;
b. bahwa data data yang tercantum dalam lampiran ini dipandang memenuhi syarat menjadi Pengesahan Perubahan Profil Lulusan dan Capaian Pembelajaran Lulusan (CPL) Kurikulum Program Studi Farmasi Tahun 2021;
c. bahwa berdasarkan huruf a dan b ditetapkan Keputusan Dekan.

Mengingat :
a. Undang-undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional;
b. Undang-undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;
c. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi;
d. Peraturan Pemerintah Nomor 19 Tahun 2005 tentang Standar Nasional Pendidikan;
e. Keputusan Presiden Nomor 31 Tahun 2002 tentang Perubahan IAIN Syarif Hidayatullah Jakarta menjadi UIN Syarif Hidayatullah Jakarta;
f. Peraturan Menteri Agama Nomor 6 Tahun 2013 tentang Organisasi dan Tata Kerja UIN Syarif Hidayataullah Jakarta;
g. Peraturan Menteri Agama Nomor 17 Tahun 2014 tentang Statuta UIN Syarif Hidayatullah Jakarta;
h. Peraturan Menteri Keuangan Nomor 42/KMK.5/2008 tentang Penetapan UIN Syarif Hidayatullah Jakarta pada Departemen Agama sebagai Instansi Pemerintah yang menetapkan Pengelolaan Keuangan Badan Layanan Umum;
i. Peraturan Menteri Pendidikan dan Kebudayaan Nomor 3 Tahun 2020 Tentang Standar Nasional Pendidikan Tinggi;

M E M U T U S K A N

Menetapkan : KEPUTUSAN DEKAN FAKULTAS ILMU KESEHATAN UIN SYARIF HIDAYATULLAH JAKARTA TENTANG PENGESAHAN PERUBAHAN PROFIL LULUSAN DAN CAPAIAN PEMBELAJARAN LULUSAN (CPL) KURIKULUM PROGRAM STUDI FARMASI TAHUN 2021.

Pertama : Menetapkan Pengesahan Kurikulum Program Sarjana Keperawatan dan Profesi Ners Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta Tahun 2022 yang terlampir dalam keputusan ini;

Kedua : Keputusan ini berlaku sejak tanggal ditetapkan, dengan ketentuan apabila terdapat kekeliruan dalam Keputusan ini akan diperbaiki sebagaimana mestinya.

DITETAPKAN DI : JAKARTA
PADA TANGGAL : 13 SEPTEMBER 2023

Prof. Dr. Zilhadia, M.Si., Apt
NIP. 19730822 200801 2 007

KEPUTUSAN DEKAN FAKULTAS ILMU KESEHATAN
UIN SYARIF HIDAYATULLAH JAKARTA
NOMOR: 1410 TAHUN 2023

TENTANG
TIM PENGEMBANG KURIKULUM
PROGRAM STUDI FARMASI DAN PROFESI APOTEKER
FAKULTAS ILMU KESEHATAN
UIN SYARIF HIDAYATULLAH JAKARTA
TAHUN 2023

Menimbang :
a. bahwa sehubungan telah disetujuinya kurikulum prodi-prodi pada Fakultas Ilmu Kesehatan, maka dipandang perlu diterbitkan surat keputusan Tim Pengembang Kurikulum Program Sarjana Farmasi dan Profesi Apoteker Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta Tahun 2023;
b. bahwa nama-nama yang tercantum dalam lampiran Keputusan ini dipandang memenuhi syarat sebagai Tim Pengembang Kurikulum Program Studi Farmasi dan Profesi Apoteker Tahun 2023;
c. bahwa berdasarkan huruf a dan b perlu ditetapkan Keputusan Dekan

Mengingat :
a. Undang-undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional;
b. Undang-undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;
c. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi;
d. Peraturan Pemerintah Nomor 19 Tahun 2005 tentang Standar Nasional Pendidikan;
e. Keputusan Presiden Nomor 31 Tahun 2002 tentang Perubahan IAIN Syarif Hidayatullah Jakarta menjadi UIN Syarif Hidayatullah Jakarta;
f. Peraturan Menteri Agama Nomor 6 Tahun 2013 tentang Organisasi dan Tata Kerja UIN Syarif Hidayataullah Jakarta;
g. Peraturan Menteri Agama Nomor 17 Tahun 2014 tentang Statuta UIN Syarif Hidayatullah Jakarta;
h. Peraturan Menteri Keuangan Nomor 42/KMK.5/2008 tentang Penetapan UIN Syarif Hidayatullah Jakarta pada Departemen Agama sebagai Instansi Pemerintah yang menetapkan Pengelolaan Keuangan Badan Layanan Umum;
i. Peraturan Menteri Pendidikan dan Kebudayaan Nomor 3 Tahun 2020 Tentang Standar Nasional Pendidikan Tinggi;

M E M U T U S K A N

Menetapkan : KEPUTUSAN DEKAN FAKULTAS ILMU KESEHATAN UIN SYARIF HIDAYATULLAH JAKARTA TENTANG TIM PEMNGEMBANG KURIKULUM PROGRAM STUDI FARMASI DAN PROFESI APOTEKER FAKULTAS ILMU KESEHATAN UIN SYARIF HIDAYATULLAH JAKARTA TAHUN 2023.

Pertama : Menetapkan Tim Pengembang Kurikulum Program Studi Farmasi dan Profesi Apoteker Fakultas Ilmu Kesehatan UIN Syarif Hidayatullah Jakarta Tahun 2023 yang terlampir dalam keputusan ini;

Kedua : Keputusan ini berlaku sejak tanggal ditetapkan, dengan ketentuan apabila terdapat kekeliruan dalam Keputusan ini akan diperbaiki sebagaimana mestinya.

DITETAPKAN DI : JAKARTA
PADA TANGGAL : 29 NOVEMBER 2023
DEKAN,

Prof. Dr. apt. Zilhadia, M.Si
NIP. 19730822 200801 2 007

Lampiran I: Keputusan Dekan Fakultas Ilmu Kesehatan
UIN Syarif Hidayatullah Jakarta
Nomor : 1414 Tahun 2023
Tanggal : 29 November 2023

Jabatan	Nama Dosen	NIP
Penanggung Jawab	apt. Ismiarni Komala, M.Sc., Ph.D	197806302006042001
Penanggung Jawab	apt. Puteri Amelia, M.Farm., Ph.D	198012042011012004
Ketua	apt. Yuni Anggraeni, M.Farm	198310282009012008
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Anggota	apt. Marvel, M.Farm	198703192018011002
Anggota	apt. Vivi Anggia, M.Farm	198702132022032002
Anggota	apt. Yardi, M.Si., Ph.D	197411232008011014
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Anggota	Dr. apt. Azrifitria, M.Si	197211272005012004
Anggota	Dr. apt. Supandi, M.Si	-

DITETAPKAN DI : JAKARTA
PADA TANGGAL : 29 NOVEMBER 2023
DEKAN,

Prof. Dr. apt. Zilhadia, M.Si
NIP. 19730822 200801 2 007

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FOREWORD

We express our deepest gratitude to Allah SWT for His grace and blessings, which have enabled us to complete the preparation of this Pharmacy Study Program curriculum book. This book is the result of strong collaboration and dedication from various parties, including lecturers, administrative staff, students, and other key stakeholders. We extend our sincere thanks to everyone who has provided valuable input, suggestions, and support throughout the curriculum development process.

The Pharmacy Study Program at the Faculty of Health Sciences, UIN Syarif Hidayatullah Jakarta, reflects our commitment to preparing a competent and qualified young generation in the field of pharmacy. This curriculum integrates pharmaceutical science with Islamic values, designed with attention to the latest advancements in the field, job market demands, and the need for professional and high-integrity pharmacists within society.

We hope this curriculum serves as a helpful guide for the entire academic community of the Pharmacy Study Program, supporting learning, research, and community service. We also look forward to the continuous growth of the Pharmacy Study Program and its meaningful contributions to the advancement of pharmaceutical science and public health.

Thank you to everyone involved in the creation of this curriculum. May Allah SWT continue to bless us in fulfilling the mission and vision of the Pharmacy Study Program.

Ciputat, September 2023
Head of the Sarajan Pharmacy Study Program

apt. Ismiarni Komala., M.Sc. PhD

IDENTITY OF THE STUDY PROGRAM

1	Name of University	UIN Syarif Hidayatullah Jakarta □ PTKIN □ PTKIS
2	Faculty	Health Sciences
3	Department/Department	
4	Study Program	Bachelor of Pharmacy
5	Accreditation Status	Very good
6	Number of Students	477
7	Number of Lecturers	23
8	Address	Jl. Kertamukti No. 5 Pisangan Ciputat South Tangerang City 15419
9	Email	Farmasi.fikes@apps.uinjkt.ac.id
10	Website	https://fikes.uinjkt.ac.id/

1 Curriculum Foundations

1.1 Philosophical Foundations

The Bachelor of Pharmacy Study Program (PSP) curriculum at UIN Syarif Hidayatullah Jakarta embodies the integration of pharmaceutical science with Islamic values, grounded in three core philosophical foundations: essentialism, progressivism, and perennialism. The essentialist philosophy serves as the foundation for passing down cultural heritage and incorporating Islamic principles into every aspect of learning. The progressivist approach is reflected in a student-centered curriculum that adapts to their needs and interests, fostering democratic and engaging educational experiences.

Perennialism, with its focus on mental discipline and intellectual development, ensures that the curriculum prioritizes rigorous academic knowledge integrated with Islamic teachings. This curriculum is designed to provide a comprehensive understanding of the essential principles of pharmaceutical science, while nurturing graduates who are not only proficient in their field but also possess strong spiritual and ethical awareness.

Ultimately, this curriculum aims to equip students with the skills and knowledge necessary to become influential leaders, serving the community by upholding both Islamic values and the highest standards of pharmaceutical science.

1.2 Sociological Foundations

The Bachelor of Pharmacy Study Program (PSP) at UIN Syarif Hidayatullah Jakarta is thoughtfully designed to incorporate sociological aspects crucial for graduates in performing their pharmaceutical duties. This curriculum emphasizes the interconnectedness of individuals, society, and culture, with a focus on how Islamic principles influence these relationships. It provides graduates with a deep understanding of the socio-cultural dynamics that shape public health behaviors and their implications for pharmaceutical practice.

By integrating pharmacy with Islamic teachings, the curriculum enables students to recognize how these values influence health attitudes and behaviors. It also encourages the application of core Islamic values—such as empathy, justice, and responsibility—in their professional practice. Furthermore, the curriculum is structured to prepare students to engage effectively and empathetically with patients from diverse cultural and religious backgrounds, fostering a compassionate and culturally sensitive approach to healthcare.

The values held by the community serve as a vital foundation for shaping the character and professionalism of the graduates. The overarching goal of the Pharmacy Study Program is to produce graduates who not only possess superior technical competence but also exhibit an acute awareness of socio-cultural dynamics and Islamic values in their practice.

In doing so, the program is committed to producing highly qualified, ethical, and just pharmaceutical professionals who are dedicated to serving the community in alignment with Islamic teachings and the needs of the society they serve.

1.3 Historical Foundations

The curriculum development of the Pharmacy Study Program (PSP) UIN Syarif Hidayatullah Jakarta reflects an evolution rich in innovation and adaptation. Since its establishment in 2004, PSP has been committed to providing quality pharmacy education in accordance with the academic standards and regulations applicable at the time. The Bachelor pharmacy study program curriculum has been carefully prepared from the beginning, paying attention to the integration between pharmaceutical science and Islamic values. The university's compulsory courses on Islam have become integral to the curriculum, reinforcing the Islamic identity and vision imprinted in this pharmaceutical education. As time goes by, the Bachelor pharmacy study program does not stop innovating. Revisions and adjustments continue to improve education quality and answer the times' challenges. With the addition or deletion of courses and updating curriculum content, PSP ensures that the curriculum remains relevant and responsive to the rapid development of science and technology. However, Islamic values and pharmaceuticals remain the main foothold. The curriculum is reviewed from an academic perspective and the perspective of Islam and its benefits for society. The educational innovations carried out always consider how pharmacy education can be a source of benefits for the ummah and the wider community.

In the 2015/2016 school year, the pharmacy curriculum was prepared as an integration of pharmacy and Islamic science with a total of 156 learning credits. One hundred fifty-six(157) credits consist of 7 credits of national characterizing courses (Indonesian Language 3 credits, Citizenship 2 credits and Pancasila 2 credits), 12 credits of university characterizing courses (Islamic Studies 4 credits, Arabic Language 3 credits, English 3 credits, Qiraah practicum one credit and Worship practicum one credit) and 137 credits are the characteristic courses of the study program. Based on the curriculum review and following the development of the association of pharmacy universities, PSP UIN Jakarta revised the curriculum. It produced a curriculum that began to be implemented in the 2021/2022 academic year. The curriculum preparation is based on the guidelines for preparing the higher education curriculum published by the directorate general of higher education of the Ministry of Education and Culture in 2020. The 2021/2022 curriculum has nine graduate profiles and 35 Learning outcomes with a curriculum structure of 147 credits. In order to sharpen the OBE-based curriculum, minor revisions have been made in 2023, showing the study programs's commitment to continue to improve and optimize the curriculum in accordance with the demands of the times. The revision was made related to the compression of LO, which initially had 35 to 17 learning outcomes without disturbing the curriculum structure, which still has 147 credits. By maintaining the core curriculum structure and the number of credits, but with the simplification of the expected competencies, PSP remains a pioneer in pharmacy education based on Islamic values and relevant to the times.

1.4 Legal Basis

The legal basis for the preparation of the curriculum of the Pharmacy undergraduate study program of UIN Syarif Hidayatullah Jakarta is as follows:

1. Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers (Statute Book of the Republic of Indonesia Number 157 of 2005, Supplement to Statute Book of the Republic of Indonesia Number 4586);
2. Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education (Statute Book of the Republic of Indonesia Number 158 of 2012, Supplement to Statute Book of the Republic of Indonesia Number 5336);
3. Presidential Regulation of the Republic of Indonesia Number 8 of 2012, concerning the Indonesia National Qualifications Framework (KKNI);
4. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 73 of 2013, concerning the Implementation of KKNI in the Higher Education Sector;
5. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020, concerning National Standards for Higher Education;
6. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 5 of 2020, concerning Accreditation of Study Programs and Universities;
7. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 7 of 2020 concerning the Establishment, Change, and Dissolution of State Universities, and the Establishment, Change, and Revocation of Private Universities Permits;
8. Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 81 of 2014 concerning Diplomas, Competency Certificates, and Higher Education Professional Certificates;
9. Regulation of the Minister of Research, Technology, and Higher Education of the Republic of Indonesia
10. Guidebook for preparing KPT in the Industrial Era 4.0 to Support Independent Learning Independent Campus, Directorate General of Belmawa, Higher Education-Ministry of Education and Culture, 2020.
11. Independent Learning Guidebook – Independent Campus, Directorate General of Belmawa, Higher Education-Ministry of Education and Culture, 2020.
12. Guidelines for the Preparation and Evaluation of the Curriculum of LPM UIN JAKARTA 2015
13. Academic Manuscript of Graduate Competency Standards and Pharmacy Education Curriculum APTFI 2013
14. Rector's Decree number 491 of 2017 concerning the Strategic Plan of UIN Syarif Hidayatullah Jakarta 2017 – 2021.
15. Rector's Decree number 890 of 2019 concerning SPMI
16. Rector's Decree No. 10 of 2015 concerning Curriculum Development Guidelines
17. Decree of the Rector of UIN Syarif Hidayatullah Jakarta No. 503 of 2020 concerning Guidelines for the Preparation of the Curriculum of UIN Syarif Hidayatullah Jakarta

2 Vision, Mission, Goals, and Strategy of the Study Program

2.1 Vision

To become a distinguished provider of pharmaceutical undergraduate education, the integration of pharmaceutical science development with Islamic values and Indonesian cultural wisdom will enable competitiveness at both national and international levels by 2025.

2.2 Mission

1. Deliver-quality pharmaceutical undergraduate education is based on Islamic values and Indonesian cultural knowledge.
2. Conduct research in the field of pharmacy utilizing Indonesian natural resources that meet the halal criteria.
3. Engaging in community services based on research outcomes in the field of pharmacy.
4. Establish productive and sustainable Tri dharma cooperation with national and international pharmaceutical-related institutions.
5. Provide an opportunity for graduates of religious schools (madrasah/ pesantren) to obtain high-quality pharmaceutical higher education.

2.3 Objectives

1. Produce pharmacy graduates with Islamic integrity in performing pharmaceutical work, capable of competing nationally and internationally, and proficient in applying halal aspects in the pharmaceutical field.
2. Develop a well-governed education system encompassing transparent, accountable, accurate, and efficient planning, implementation, evaluation, and sustainable development.
3. Generate research outcomes in the field of pharmacy and halal product development applicable to the community.
4. Possess the ability to actively contribute to providing solutions to pharmaceutical issues and halal aspects for the community.
5. Foster good cooperation with various stakeholders in education, research, and community engagement

2.4 Strategy

The strategy of the Pharmacy study program of UIN Syarif Hidayatullah Jakarta can be seen in table 1.

Table 1. Study program strategy

Objectives	Achievement Strategy	Indicator
(S1) Implementation of a quality learning process following global standards.	Enhancing the Curriculum Quality following Indonesian Association of Pharmacy Higher Education Institutions Standards	Review the content of the curriculum every year.
		Every five years, a curriculum review involving alumni, stakeholders, and policy makers is conducted.
	Integrating Islamic Courses into the Curriculum.	All students participated in and passed the worship practice (prayer and qira'at).
	Enriching the Curriculum with Courses on the Halal Aspects of Medicine, Cosmetics, and Food	All students attend and pass courses in the field of halal.
	Enhancing the English Language Skills of Lecturers and Graduates	All graduates have a TOEFL score of at least 500 in 2020
		Each Lecturer produces International publications.
	Professional Development for Lecturers through Advanced Studies, Workshops, and Seminars.	Number of lecturers with S3 education
		All lecturers have passed the PEKERTI training in 2020.
		Number of lecturers participating in international scientific activities
		Number of lecturers participating in scientific activities at the national level
	Development of Training Programs for Educational Personnel.	The number of education staff who participated
	Enhancing the Quality of the Learning Process	Monitoring the Learning Process Each Semester by the Quality Assurance Unit
		Evaluation of Lecturer Performance by Students Each Semester
		Average number of students who graduate on time
		Increase in the average GPA of graduates to 3.35 in 2020.
	Creating a Supportive Academic Environment in the Study Program	The increasing number of students involved in lecturer research
	Provide Comprehensive Facilities to Support the Accurate and Quality Execution of the Learning Process."	Renewal of laboratory equipment every year
		Renewal of learning aids (in focus) every year
	Improving the soft skills and competitiveness of graduates	The increasing number of students participating in various competitions, both nationally and internationally
(S2) Increasing the number of publications	Allocation of Funds for Research and Scientific	Number of funded faculty research proposals

Objectives	Achievement Strategy	Indicator
and scientific activities at the national and international levels in the fields of pharmaceuticals and halal medicines, cosmetics and food,	Activities for Both Lecturers and Students	Number of lecturer publications in reputable international journals
		Number of patents owned by lecturers
		Number of publications in accredited national journals.
		The Number of Textbooks Authored by Lecturers
		The Number of Lecturers Who Have Participated as Speakers in International Seminars
		The Number of Lecturers Who Participated in National Seminars
(S3) Target Increasing the development of science and technology applications to solve community problems, especially in the field of pharmacy and halal medicine/cosmetics/food	(Strategy) Allocation of funds for lecturer community service and the formation of a Halal Auditor Team	Integrated community service activities with other health professions are increasing.
		Increase in the Number of Lecturers Certified as Halal Auditors
		Total Community Service Funds Allocated by the Institution
(**S4**) Facilitating Partnerships for Teaching, Research, and Community Service Implementation	Fostering Collaboration with Diverse Stakeholders to Advance Education, Research, and Community Service	The Number of Research Collaborations with Various Institutions
		The number of collaborations with hospitals.
		The amount of cooperation with local governments.
(**S5**) Special selection of prospective students from madrasas/pesantren	Carry out a unique selection process for madrasah pesantren from various regions.	Number of madrasah pesantren graduates.

2.5 University of Value

In implementing education at UIN Syarif Hidayatullah Jakarta, the Pharmacy Study Program (PSP) curriculum plays an important role in realizing the vision, mission, and goals carried out by this university. Philosophically, the PSP curriculum is designed to integrate Islamic, Indonesian, and scientific values in every aspect of learning. This philosophy is reflected in the selection of curriculum content that combines the principles of pharmaceutical science with Islamic values and Indonesia culture. As part of UIN Syarif Hidayatullah Jakarta, PSP strives to integrate Islamic science with pharmaceutical science so that each course provides a deep understanding of pharmacy and teaches moral values, ethics, and social responsibility reflected in Islamic teachings.

Sociologically, the bachelor of pharmacy study program’s curriculum is designed to produce technically competent graduates sensitive to the dynamics of the surrounding community. Students are invited to become competitive agents of change nationally and internationally through research-based learning, information technology, and innovation. This curriculum also ensures that access to quality higher education is equally available to the community, realizing an inclusive and equitable vision. Historically, the PSP curriculum development journey reflects UIN Syarif Hidayatullah Jakarta's commitment to fighting for the quality of higher education that is professional, with integrity, and entrepreneurial. Periodic evaluations and reviews are carried out to ensure that the curriculum is always relevant to the development of science, technology, and the needs of society. This review involves internal and external stakeholders, as well as paying attention to the study program's vision, mission, and feedback. Thus, the PSP curriculum is not only a tool to produce academically qualified graduates but also a forum to form character and personality in accordance with the values of Islam, Indonesianness, and science. Through this holistic approach, UIN Syarif Hidayatullah Jakarta seeks to make PSP a competitive frontline in pharmaceutical education and make a real contribution to society and the nation.

3 Curriculum Evaluation & Tracer Study

3.1 Curriculum Evaluation

Evaluation Mechanism

The review of the curriculum for the UIN Syarif Hidayatullah environment is regulated in the UIN Syarif Hidayatullah Jakarta Curriculum Development Guidelines Chapter IX Article 19, 2015. The curriculum review was carried out by paying attention to the principles of curriculum development based on relevance, flexibility, novelty, efficiency and effectiveness, continuity by integrating science, Islam, and Indonesianness, involving internal and external stakeholders, and paying attention to the vision, mission, and feedback of the study program. The curriculum review mechanism refers to the Development Procedure Manual and curriculum review guidelines at the study program level made by the UIN Syarif Hidayatullah Quality Assurance Institute. The procedure for developing and reviewing the curriculum at the study program level is as follows:

Preparation stage

1. The head of the study program is responsible for the curriculum's reconstruction/design and development.
2. Design and reconstruction activities are carried out every five years of the study period.
3. The head of the study program proposes the Curriculum Restructuring / Design / Development Team to the dean.
4. Evaluation of the Effectiveness of Curriculum Implementation and the Achievement of Learning Outcomes
5. *Tracer Study* on customer needs includes Alumni, Private Companies, Related Agencies, and Students.
6. SWOT Analysis on the Ability of Study Programs

Implementation Stage

1. Graduate profiles are determined based on the results of tracer studies and university and faculty strategic plans.
2. Graduate competencies are formulated by considering the needs of *stakeholders* at home and abroad. The recommendation of professional associations is a precious input. The curriculum structure is determined so that achieving all competencies is carried out systematically.
3. The study materials are prepared based on the vision and mission with the aim that the competencies that have been formulated can be achieved.
4. Development of Courses and Practice Along with their Semester Credit System
5. Preparation of course descriptions and syllabus
6. Determination of learning strategies
7. Preparation of semester learning plan and improvement of the draft curriculum
8. Curriculum validation

Curriculum Items / Elements evaluated from the previous curriculum

1. Integrating the Pharmacist Profession curriculum into the Bachelor of Pharmacy curriculum
2. Total number of credits of courses
3. Adjustment of graduate profiles with OBE-based curriculum
4. Adjustment of graduate learning outcomes (LO) with OBE-based curriculum
5. Merger of intersecting courses and adjustment of course depth.
6. Adjustment of study materials to the standards of the pharmacist profession
7. Arrangement of curriculum structure to allow for an increase in students graduating on time
8. The addition of credits for elective courses increases curriculum flexibility.

Results of Evaluation and Improvement

1. The undergraduate pharmacy curriculum in 2021 is integrated with the pharmacist profession curriculum.
2. The total number of credits in the curriculum has changed from 156 to 147 credits
3. The graduate profile has been adjusted to the OBE-based curriculum graduate profile
4. LO is adapted to the OBE-based curriculum
   - The resulting curriculum in 2021 resulted in LO 35
   - The minor revision in 2023 will be carried out by consolidating from the initial LO of 35 to 17 LO without reducing the target of the LO
5. Merger of intersecting courses and adjustment of course depth Some of the intersecting courses are combined and adjusted into the material, among others, as follows:
   - Citizenship (2 credits) and Pancasila (2 credits) merged into Pancasila and Civic Education (3 credits)
   - Basic Chemistry (2 credits), Pharmaceutical Mathematics (2 credits), Cell Biology (2 credits) and Basic Pharmaceutical Physics (2 credits) are combined into Basic Science of Pharmacy (3 credits).
   - Basic chemistry practice (1 credit), and basic physics practice merged into Basic Science of Pharmacy Practice (1 credits)
   - Organic chemistry 1 (2 credits) and organic chemistry 2 (credits) are combined into pharmaceutical organic chemistry (2 credits)
   - Pharmaceutical Botany (2 credits) and Pharmacognosy and Phytochemistry 1 (2 credits) combined into Pharmacognosy (2 credits)
   - Pharmacy botany practicum (1 credit) and phytochemistry pharmacognosy practice 1 (1 credit) merged into pharmacognosy practice (1 credit)
   - Human Anatomy and Physiology (2 credits) pathophysiology (2 credits) are merged into Human Anatomy, Physiology and Pathophysiology (2 credits)
   - Medicinal chemistry 1 (2 credits) and medicinal chemistry 2 (2 credits) merged into medicinal chemistry (2 credits)
   - Basic biochemistry (2 credits) and clinical biochemistry (2 credits) merged into biomedicine (2 credits)
   - Change the name of Biopharmaceutics and Pharmacokinetics 1 to Biopharmaceutics, and Biopharmaceutics and Pharmacokinetics 2 to Pharmacokinetics, with each course maintaining the same 2 credits.

6. Adjustment of study materials with pharmacist professional standards and Guidelines for Curriculum Preparation of UIN Syarif Hidayatullah Jakarta. Some of the courses added include:
   - Islam and Health Sciences (2 credits)
   - Entrepreneur and Digital Pharmacy (2 credits)
   - Information Education and Communication (2 credits)
   - National Health System (2 credits)
   - Pharmacy Management (2 credits)
   - Pharmaceutical services (2 credits)
   - Interprofessional Education (IPE 1) (1 credit)
   - Interprofessional Education (IPE 2) (1 credit)
   - Health regulations and laws (2 credits)
   - Drug Stability (2 credits)
   - Compounding and dispensing (2 credits)
   - Adjustment of the depth level of the course
7. Arrangement of curriculum structure so as to allow for an increase in students graduating on time
   - The Research Methodology and Biostatistics course is given in semester 5 so that students in semester 6 can design research
   - The Proposal Seminar course is moved from semester 8 to semester 7
   - Hospital Pharmacy Practice is usually carried out in semester 7 and transferred to semester 6
8. The addition of credits for elective courses is carried out in order to increase curriculum flexibility. In the previous curriculum, elective courses were taken as many as 4 credits, so in the new curriculum, it is mandatory to take as many as 10 credits.

3.2 Tracer Study

The needs analysis in curriculum development was primarily conducted through surveys targeting graduate users and alumni, alongside translating relevant government policies, particularly those issued by the Ministry of Education, Culture, Research, and Technology. The user surveys play a crucial role in understanding the real-world expectations of industries and employers regarding the skills and competencies required from graduates. Feedback gathered from these users allows the institution to ensure that the curriculum is not only theoretically sound but also aligned with the evolving demands of the workforce, ensuring graduates are well-prepared for their professional careers. By identifying gaps and strengths in current graduates' performances, adjustments to the curriculum can be made to enhance its relevance and effectiveness.

Additionally, these surveys provide insights into the level of satisfaction among employers, highlighting areas where the curriculum successfully prepares graduates and areas that may require further improvement. The results of the user satisfaction survey can be found in Table 2T

Table 2. Results Graduate user satisfaction level.

No.	Types of Abilities	Number of Graduates Rated by Users				Follow-up Plan by Study Program
		Excellent	Good	Enough	Less	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Integrity (ethics and morals)	56,25%	42,19%	1,56%	0,00%	Improving the implementation of Islamic and health integration by publishing a guidebook for Islamic and health integration and strengthening attitudes in the teaching system
2	Expertise based on the field of science (professionalism)	56,25%	43,75%	0,00%	0,00%	Enhancing academic activities by bringing in experts from outside such as general stadiums, workshops, webinar series, national and international seminars, and facilitating students to participate in short course activities held by APTFI
3	English	17,19%	54,69%	28,13%	0,00%	Implementing bi-lingual teaching programs and facilitating student exchange activities
4	Use of Information Technology	59,38%	37,50%	3,13%	0,00%	Developing a curriculum by adding digital pharmacy courses
5	Communication	48,44%	48,44%	3,13%	0,00%	develop the curriculum by adding Communication, Education and Information courses
6	Teamwork and leadership	57,81%	42,19%	0,00%	0,00%	Facilitating students to carry out leadership training activities both on campus and outside the campus (ISMAFARSI)
7	Self-development	46,88%	51,56%	1,56%	0,00%	Facilitating students to carry out self-development activities/soft skills such as public speaking, journalism, entrepreneurship training
Total		(a) =342.2	(b) =320.3	(c) =37.5	(d) =0	

4 Graduate Profile & Graduate Learning Outcomes (LO) Formulation

4.1 Graduate Profile

Graduates of the Pharmacy Study Programme are Bachelors of Pharmacy who possess faith, piety, and commitment to lifelong learning and professional development (1). They are proficient in various pharmaceutical settings (2), demonstrate strong leadership and decision-making skills (3), and exhibit creativity and innovation in professional practice (4). They communicate professionally, provide compassionate service, and willingly share expertise with future generations (5). They also apply a holistic Islamic approach to health maintenance, disease treatment, and the promotion of well-being (6).

4.2 Learning Outcome formulation

Table 3. Learning Outcomes (LO)

Learning Outcome	Description
Attitude Aspect	
LO-1	Graduates are able to demonstrate devotion to Almighty God and uphold humanitarian values in performing pharmaceutical duties.
LO-2	Graduates are able to demonstrate a spirit of nationalism through collaborations and contribution to the life of the nation and the state.
LO-3	Graduates are able to demonstrate respect for the law, discipline, and responsibility, and internalize values, norms, and academic ethics within society and the state.
General skills Aspect	
LO-4	Graduates are able to work independently and systematically, conduct documentation and evaluation, make appropriate decisions, and generate solutions and ideas in the field of pharmacy.
LO-5	Graduates are able to design, conduct, and report research to advance pharmaceutical science.
LO-6	Graduates are able to collaborate and build networks to develop entrepreneurial ideas, professional careers, and self-development in the field of pharmacy, and communicate effectively in Indonesian, English, and Arabic
LO-7	Graduates are able to recite the Qur'an and practice Islamic worship.
Specific skills Aspect	
LO-8	Graduates are able to identify and solve drug-related problems using evidence-based approaches in the design, preparation, distribution, management, and/or service of pharmaceutical preparations to optimize therapeutic outcomes

LO-9	Graduates are able to critically search, analyze, and organize pharmaceutical information and communicate it effectively to individuals and communities
LO10	Graduates are able to perform pharmaceutical duties under the supervision of a pharmacist responsibly and in accordance with applicable laws and professional ethics
LO-11	Graduates are able to apply a comprehensive Islamic approach to health maintenance, disease treatment, and wellness promotion, and assess medicines, food, and cosmetics for halal compliance
LO12	Graduates are able to collaborate effectively with other health professionals to enhance healthcare services
Knowledges Aspect	
LO-13	Graduates are able to master the theories, methods, and applications of pharmaceutical science and technology (pharmaceutics, pharmaceutical chemistry, pharmacognosy, and pharmacology).
LP-14	Graduates are able to master the concepts and applications of biomedical sciences (biology, anatomy, microbiology, physiology, pathophysiology, biomedical ethics, and biostatistics)
LO-15	Graduates are able to master the principles of pharmacotherapy, pharmaceutical care, pharmacy practice, pharmaceutical calculations, pharmacoepidemiology, evidence-based medicine, and pharmacoeconomics
LO-16	Graduates are able to master pharmaceutical management, social pharmacy, pharmaceutical law and ethics, communication techniques, and occupational safety principles.
LO-17	Graduates are able to demonstrate knowledge of Islamic medical treatment, halal assurance systems, and the identification and analysis of halal status in raw materials, processes, and products for medicines, cosmetics, and food.

4.3 Matrix of LO relationship with Graduate Profile

Table 4. Matrix of learning outcome relationship with Graduate Profile

Learning Outcomes	Description
Attitude Aspect	
LO-1	Graduates are able to demonstrate devotion to Almighty God and uphold humanitarian values in performing pharmaceutical duties.
LO-2	Graduates are able to demonstrate a spirit of nationalism through collaborations and contribution to the life of the nation and the state.
LO-3	Graduates are able to demonstrate respect for the law, discipline, and responsibility, and internalize values, norms, and academic ethics within society and the state.
General skills Aspect	
LO-4	Graduates are able to work independently and systematically, conduct documentation and evaluation, make appropriate decisions, and generate solutions and ideas in the field of pharmacy.
LO-5	Graduates are able to design, conduct, and report research to advance pharmaceutical science.
LO-6	Graduates are able to collaborate and build networks to develop entrepreneurial ideas, professional careers, and self-development in the field of pharmacy, and communicate effectively in Indonesian, English, and Arabic
LO-7	Graduates are able to work independently and systematically, conduct documentation and evaluation, make appropriate decisions, and generate solutions and ideas in the field of pharmacy.
Specific skills Aspect	
LO-8	Graduates are able to identify and solve drug-related problems using evidence-based approaches in the design, preparation, distribution, management, and/or service of pharmaceutical preparations to optimize therapeutic outcomes
LO-9	Graduates are able to critically search, analyze, and organize pharmaceutical information and communicate it effectively to individuals and communities
LO10	Graduates are able to perform pharmaceutical duties under the supervision of a pharmacist responsibly and in accordance with applicable laws and professional ethics
LO-11	Graduates are able to apply a comprehensive Islamic approach to health maintenance, disease treatment, and wellness promotion, and assess medicines, food, and cosmetics for halal compliance

Learning Outcomes	Description
LO12	Graduates are able to collaborate effectively with other health professionals to enhance healthcare services
Knowledges Aspect	
LO-13	Graduates are able to master the theories, methods, and applications of pharmaceutical science and technology (pharmaceutics, pharmaceutical chemistry, pharmacognosy, and pharmacology).
LP-14	Graduates are able to master the concepts and applications of biomedical sciences (biology, anatomy, microbiology, physiology, pathophysiology, biomedical ethics, and biostatistics)
LO-15	Graduates are able to master the principles of pharmacotherapy, pharmaceutical care, pharmacy practice, pharmaceutical calculations, pharmacoepidemiology, evidence-based medicine, and pharmacoeconomics
LO-16	Graduates are able to master pharmaceutical management, social pharmacy, pharmaceutical law and ethics, communication techniques, and occupational safety principles.
LO-17	Graduates are able to demonstrate knowledge of Islamic medical treatment, halal assurance systems, and the identification and analysis of halal status in raw materials, processes, and products for medicines, cosmetics, and food.

5 Determination of Study Materials

5.1 Determination of Study Material

The process of determining the study materials in the curriculum of the Pharmacy Study Program at UIN Syarif Hidayatullah Jakarta adheres to the National Higher Education Standards issued by the Minister of Education and Culture of the Republic of Indonesia in 2020, along with the Pharmacist Professional Standards. This process takes into account the competency needs of graduates, advancements in pharmaceutical science and technology, as well as Islamic values. Study materials are established through a comprehensive analysis of graduate learning outcomes and the desired profile of pharmacy graduates, which are then aligned with the pharmacist professional standards set by the Indonesian Pharmacists Association (IAI). The integration of Islamic principles is reflected in the ethical application of Islamic values in pharmaceutical practice, clinical decision-making, and the development of halal and thayyib pharmaceutical products. Through collaboration with faculty, stakeholders, and reviews of national policies, the course and practical materials are systematically organized, covering basic pharmaceutical sciences, clinical sciences, pharmaceutical technology, community pharmacy, and entrepreneurship (pharmapreneurship). This approach ensures that graduates are well-equipped to meet the challenges of the pharmacist profession across various sectors, with a solid foundation of both knowledge and Islamic values.

Table 5. Study Materials (SM)

No	Study Material Codes	Study Materials	References
1	**SM01**	Basic rules of religion	National Standards for Higher Education in 2020
2	**SM02**	Building Professional Attitudes and Responsibilities through a Foundation of Citizenship.	National Standards for Higher Education in 2020
3	**SM03**	A study of health law and regulations related to Pharmaceutical Practice.	Indonesian Pharmacist professional standards
4	**SM04**	Pharmaceutical care reflects the dedication and accountability of pharmacists to offer thorough services, with the goal of enhancing the welfare of patients receiving pharmaceutical services	Indonesian Pharmacist professional standards
5	**SM05**	Health system governance, public health problems, and social factors that affect healthy and sick behavior.	Indonesian Pharmacist professional standards

No	Study Material Codes	Study Materials	References
6	**SM06**	Critical thinking, analytical, adaptive, and creative	Indonesian Pharmacist professional standards
7	**SM07**	Study of the potential development of Pharmaceutical Practice and entrepreneurship.	Indonesian Pharmacist professional standards
8	**SM08**	The use of technology in the provision of digital and objective data that can be accessed by health workers and Pharmaceutical Service Recipients towards an equal relationship in decision-making	Indonesian Pharmacist professional standards
9	**SM09**	Problem-based learning	Indonesian Pharmacist professional standards
10	**SM10**	Skills in conducting and reporting research results both oral and written	Indonesian Pharmacist professional standards
11	**SM11**	Written and oral communication in Indonesian Language and United Kingdom and Arabic	Indonesian Pharmacist professional standards
12	**SM12**	Fiqh of worship and reading the Qur'an	Indonesian Pharmacist professional standards
13	**SM13**	Drug problems in the design and development of drug preparations, traditional medicines, cosmetics.	Indonesian Pharmacist professional standards
14	**SM14**	Drug problems in the manufacture/production of drug preparations, medicinal ingredients, traditional medicines, cosmetics.	Indonesian Pharmacist professional standards
15	**SM15**	Drug problems in the procurement of pharmaceutical preparations and medical devices	Indonesian Pharmacist professional standards
16	**SM16**	Drug problems in the storage of Pharmaceutical Preparations	Indonesian Pharmacist professional standards
17	**SM17**	Drug problems in the management of narcotic preparations, psychotropics, and pharmaceutical precursors	Indonesian Pharmacist professional standards
18	**SM18**	Problems in the management of critical pharmaceutical preparations, human rights, cytostatics,	Indonesian Pharmacist professional standards

No	Study Material Codes	Study Materials	References
		radiopharmaceuticals, and B3 groups	
19	**SM19**	Drug problems in the mixing/*compounding of* extemporaneous *pharmaceutical preparations*	Indonesian Pharmacist professional standards
20	**SM20**	Drug problems in pharmaceutical services for individuals and society	Indonesian Pharmacist professional standards
21	**SM21**	Principles, Procedures and skills of pharmacovigilance	Indonesian Pharmacist professional standards
22	**SM22**	Principles, procedures, skills of pharmaceutical services for individuals and society	Indonesian Pharmacist professional standards
23	**SM23**	Principles, procedures, skills in making/producing drug preparations	Indonesian Pharmacist professional standards
24	**SM24**	Principles, procedures, quality testing skills and quality assurance of drug preparations	Indonesian Pharmacist professional standards
25	**SM25**	Principles, procedures, skills in the preparation and distribution of materials, tools, equipment	Indonesian Pharmacist professional standards
26	**SM26**	Principles, Procedures, and Management Skills for Narcotics, Psychotropics, and Pharmaceutical Precursors	Indonesian Pharmacist professional standards
27	**SM27**	Principles, Procedures, and Management Skills for Critical Pharmaceutical Preparations, Human Rights, Cytostatics, Radiopharmaceuticals, and Controlled Substances (Group B3)	Indonesian Pharmacist professional standards
28	**SM28**	Principles, procedures, research and development skills of Pharmaceutical Preparations	Indonesian Pharmacist professional standards
29	**SM29**	Principles, procedures, and *compounding skills* of extemporaneous pharmaceutical preparations	Indonesian Pharmacist professional standards
30	**SM30**	Principles, Procedures, and Skills in Preparing and Distributing Ready-to-Use Sterile Materials, Tools, Equipment, and Devices	Indonesian Pharmacist professional standards

No	Study Material Codes	Study Materials	References
		(Central Sterile Supply Department - CSSD)	
31	**SM31**	Islamic Health Knowledge and Islamic Medicine Methods	Indonesian Pharmacist professional standards
32	**SM32**	Effective interprofessional communication	Indonesian Pharmacist professional standards
33	**SM33**	Physics, Basic Chemistry, Organic Chemistry, Pharmaceutical Physics, Pharmacy, Medical Chemistry, Pharmaceutical Chemistry, and Pharmacognosy	Indonesian Pharmacist professional standards
34	**SM34**	Biomedical sciences: molecular biology, anatomy, physiology, pathology, pathophysiology, microbiology, parasitology, immunology, biochemistry, the body's immune system and response, mechanisms of action of drugs and other chemical compounds in the body	Indonesian Pharmacist professional standards
35	**SM35**	Pharmacology, Bio pharmacy, Pharmacokinetics, Pharmacogenomics, Pharmacogenetics, Pharmacotherapy, Clinical Chemistry, Drug Information, Pharmaceutical Formulation and Technology, Pharmaceutical Calculations, Pharmaceutical Care, and Prescription Services.	Indonesian Pharmacist professional standards
36	**SM36**	Pharmaceutical Sociology, Pharmacovigilance, Resource Management, Organizational Management, Accounting, Pharmaceutical Administration, Information and Communication Technology, and Communication Engineering	Indonesian Pharmacist professional standards
37	**SM37**	Pharmacoepidemiology, health economics, health policy, professional communication.	Indonesian Pharmacist professional standards
38	**SM38**	Promotion of health, environmental health,	Indonesian Pharmacist professional standards

No	Study Material Codes	Study Materials	References
		occupational health and safety (K3).	
39	**SM39**	Professional Ethics	Indonesian Pharmacist professional standards
40	**SM40**	Halal Assurance System	Indonesian Pharmacist professional standards
41	**SM41**	Halal Analysis of Drugs and Food	Indonesian Pharmacist professional standards

Table 7. Study Materials Based on LO Study Programs

LO		Description	Study Materials
Attitude Aspects (A)			
LO-1	A 1	Graduates are able to demonstrate devotion to Almighty God and uphold humanitarian values in performing pharmaceutical duties. Graduates are able to demonstrate a spirit of nationalism through collaborations and contribution to the life of the nation and the state.	Basic rules of religion **(SM01**)
LO-2	A2	Graduates are able to demonstrate respect for the law, discipline, and responsibility, and internalize values, norms, and academic ethics within society and the state.	Foundations of citizenship in building professional attitudes and responsibilities (**SM02)**
LO-3	A3	Graduates are able to demonstrate devotion to Almighty God and uphold humanitarian values in performing pharmaceutical duties.	- A Study of Health Law and Regulations Related to Pharmaceutical Practice (**SM03**) - Pharmaceutical care, the responsibility and commitment of Pharmacists to provide comprehensive services to achieve the welfare of Pharmaceutical Service recipients (**SM04)** - Health system governance, public health problems, and social factors affect healthy and sick behavior (**SM05).**
General Skills Aspects (GS)			

LO		Description	Study Materials
LO-4	GS1	Graduates are able to work independently and systematically, conduct documentation and evaluation, make appropriate decisions, and generate solutions and ideas in the field of pharmacy.	- Critical thinking, analytical, adaptive, and creative (**SM06)** - Study on the potential development of Pharmaceutical Practice and entrepreneurship (**SM07)** - The use of technology in the provision of digital and objective data that health workers and Pharmaceutical Service Recipients can access towards an equal relationship in decision-making (**SM08).**
LO-5	GS2	Graduates are able to design, conduct, and report research to advance pharmaceutical science.	- Problem-based learning (**SM09).** - Skills in conducting and reporting research results, both oral and written (**SM10)**
LO-6	GS3	Graduates are able to collaborate and build networks to develop entrepreneurial ideas, professional careers, and self-development in the field of pharmacy, and communicate effectively in Indonesian, English, and Arabic	- Study on the potential development of Pharmaceutical Practice and entrepreneurship (**SM07)** - Written and oral communication in Indonesian Language and United Kingdom and Arabic (**SM11)**
LO-7	GS4	Graduates are able to work independently and systematically, conduct documentation and evaluation, make appropriate decisions, and generate solutions and ideas in the field of pharmacy.	Fiqh of worship and reading of the Qur'an (**SM12)**
Special Skills Aspects (SS)			
LO-8	SS1	Graduates are able to identify and solve drug-related problems using evidence-based approaches in the design, preparation, distribution, management, and/or service of pharmaceutical preparations to optimize therapeutic outcomes	- Drug problems in the design and development of drug preparations, traditional medicines, cosmetics (**SM13)** - Drug problems in the manufacture/production of drug preparations, medicinal ingredients, traditional medicines, cosmetics (**SM14)**

LO		Description	Study Materials
			- Drug problems in the procurement of pharmaceutical preparations and medical devices (**SM15)** - Drug problems in the storage of Pharmaceutical Preparations (**SM16)** - Drug problems in the management of narcotic preparations, psychotropics, and pharmaceutical precursors (**SM17)** - Issues in the management of critical pharmaceutical preparations*, human rights, cytostatics, radiopharmaceuticals, and group B3* (**SM18)** - Drug problems in the compounding of *extemporaneous pharmaceutical preparations* (**SM19)**
LO-9	SS2	Graduates are able to critically search, analyze, and organize pharmaceutical information and communicate it effectively to individuals and communities	- Drug problems in pharmaceutical services for individuals and communities (**SM20)** - Principles, Procedures and Skills of Pharmacovigilance (**SM21)**
LO-10	SS3	Graduates are able to perform pharmaceutical duties under the supervision of a pharmacist responsibly and in accordance with applicable laws and professional ethics	- Principles, procedures, and skills of pharmaceutical services for individuals and the community (**SM22).** - Principles, procedures, skills in making/producing drug preparations (**SM23)** - Principles, procedures, quality testing skills and quality assurance of drug preparations (**SM24)** - Principles, procedures, skills in the preparation and distribution of materials, tools, equipment (**SM25)**

LO		Description	Study Materials
			- Principles, procedures, management skills of narcotic preparations, psychotropics, and pharmaceutical precursors (**SM26)** - Principles, procedures, management skills of critical pharmaceutical preparations, human rights, cytostatic, radiopharmaceuticals, and group B3 (**SM27)** - Principles, procedures, research and development skills of pharmaceutical preparations (**SM28).** - Principles, procedures, compounding skills Extemporaneous *pharmaceutical preparations* (**SM29).** - Principles, procedures, skills in the preparation and distribution of ready-to-use sterile materials, tools, equipment, equipment (Central Sterile Supply Department (CSSD)) (**SM30).**
LO-11	SS4	Graduates are able to apply a comprehensive Islamic approach to health maintenance, disease treatment, and wellness promotion, and assess medicines, food, and cosmetics for halal compliance	Islam, health knowledge and Islamic medicine methods (**SM31)**
LO-12	SS5	Graduates are able to collaborate effectively with other health professionals to enhance healthcare services	Interprofessional Effective Communication (**SM32)**
Knowledge Aspect (K)			
LO-13	K1	Graduates are able to master the theories, methods, and applications of pharmaceutical science and technology (pharmaceutics, pharmaceutical chemistry, pharmacognosy, and pharmacology).	Physics, basic chemistry, organic chemistry, pharmaceutical physics, pharmacy, medical chemistry, pharmaceutical

LO		Description	Study Materials
			chemistry, pharmacognosy (**SM33)**
LO14	K2	Graduates are able to master the concepts and applications of biomedical sciences (biology, anatomy, microbiology, physiology, pathophysiology, biomedical ethics, and biostatistics)	- Biomedical sciences: molecular biology, anatomy, physiology, pathology, pathophysiology, microbiology, parasitology, immunology, biochemistry, the body's immune system and response, mechanisms of action of drugs and other chemical compounds in the body (**SM34)**
LO-15	K3	Graduates are able to master the principles of pharmacotherapy, pharmaceutical care, pharmacy practice, pharmaceutical calculations, pharmacoepidemiology, evidence-based medicine, and pharmacoeconomics	- Pharmacology, biopharmacy, pharmacokinetics, pharmacogenomics, pharmacogenetics, pharmacotherapy, clinical chemistry, drug information, pharmaceutical formulation and technology, pharmaceutical calculations, pharmaceutical care, prescription services (**SM35)**
LO-16	K4	Graduates are able to master pharmaceutical management, social pharmacy, pharmaceutical law and ethics, communication techniques, and occupational safety principles.	- Socio-pharmacy, pharmacovigilance, resource management, organizational management, accounting, pharmaceutical administration, information and communication technology, and communication engineering (**SM36)** - Pharmacoepidemiology, health economics, health policy, professional communication (**SM37).** - Promotion of health, environmental health,

LO		Description	Study Materials
			occupational health and safety (K3) (**SM38)** - Etika professional (**SM39)**
LO-17	P5	Graduates are able to demonstrate knowledge of Islamic medical treatment, halal assurance systems, and the identification and analysis of halal status in raw materials, processes, and products for medicines, cosmetics, and food.	- Basic rules of religion (**SM01)** - Halal Assurance System (**SM40)** - Analysis of Halalness of Drugs and Food (**SM41)**

Table 7. Relationship between Study Materials and LO Study Programs

LO	Stduy Material																																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
1	v																																								
2		v																																							
3			v	v	v																																				
4						v	v	v																																	
5									v	v																															
6							v				v																														
7												v																													
8													v	v	v	v	v	v	v																						
9																				v	v																				
10																						v	v	v	v	v	v	v	v	v											
11																															v										
12																																v									
13																																	v								
14																																		v							
15																																			v						
16																																				v	v	v	v		
17	v																				v																		v	v	

5.2 Description of Study Materials

Table 8. Matrix relationship of Study Materials and Courses

No	MK Name	Study Materials (SM)																																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
1	Pancasila and Civic Education		v																																							
2	Islamic Studies	v																																								
3	Qira'ah and Worship Practice	v											v																													
4	Basic Science of Pharmacy	v																																v	v	v						
5	Basic Science of Pharmacy Practice				v									v																				v	v	v						
6	Biomedicine																																		v							
7	English											v																														
8	Pharmaceutical Organic Chemistry																																	v								
9	Pharmaceutical Organic Chemistry Practice				v									v																				v								
10	Indonesian Language		v								v	v																														
11	Arabic Language	v										v																														
12	Islam and Health Sciences	v																														v										
13	Pharmaceutical Microbiology																																		v							
14	Pharmaceutical Microbiology Practice			v			v								v																											
15	Pharmacognosy			v																														v								
16	Pharmacognosy Practice														v																											
17	Human Anatomy, Physiology and Pathophysiology	v																																	v							
18	Human Anatomy, Physiology and Pathophysiology practice				v																														v							
19	Physical Pharmacy																																	v		v						

No	MK Name	Study Materials (SM)																																												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
20	Physical Pharmacy Practice	v			v									v	v																													
21	Phytochemistry 1																																	v								
22	Phytochemistry 1 Practice				v									v	v																													
23	Pharmacology and Toxicology																																			v						
24	Pharmacology and Toxicology Practice				v									v	v																													
25	Medicinal Chemistry																																	v								
26	Physico-chemical analysis																																	v								
27	Basic Pharmaceutics																																	v		v						
28	Basic Pharmaceutics Practice				v									v	v	v								v	v	v	v																	
29	Analysis of Raw Material													v											v										v								
30	Analysis of Raw Material Practice				v										v										v									v		v							
31	Pharmaceutical Biotechnology																																	v	v							
32	Pharmacotherapy 1	v																			v	v	v													v							
33	Analysis of Pharmaceutical Preparation																																	v								
34	Analysis of Pharmaceutical Preparation Practice			v										v	v																													
35	Formulation and Technology of Solid Dosage Forms													v	v																		v		v								
36	Formulation and Technology of Solid Dosage Forms Practice				v		v							v	v									v	v	v																	
37	Phytochemistry 2																																	v								
38	Phytochemistry 2 Practice				v		v							v	v																													
39	Pharmacokinetics													v																				v		v							
40	Biopharmaceutics													v																				v		v							
41	Biopharmaceutics and Pharmacokinetics Practice				v		v																	v	v	v																	

No	MK Name	Study Materials (SM)																																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
42	Halal Product Guarantee System	v																																			v				v	
43	Pharmacotherapy 2	v																				v	v													v					
44	Entrepreneur and Digital Pharmacy	v						v	v			v																					v								
45	Research Methodology and Biostatistics									v	v																				v										v
46	Analysis of Drug, Food and Cosmetic Halal	v																																							v
47	Analysis of Drug, Food and Cosmetic Halal Practice	v					v							v																											
48	Formulation and Technology of Liquid and Semi-Solid Dosage Forms													v	v	v	v																	v		v					
49	Formulation and Technology of Liquid and Semi-Solid Dosage Forms Practice				v		v							v	v	v	v							v	v	v															
50	Information Education and Communication																					v	v										v	v			v				
51	National Health System			v		v																												v	v						
52	Phytotherapy	v												v																v			v							
53	Pharmacotherapy 3	v																			v	v	v												v					
54	Formulation and Technology of Sterile Dosage Forms													v	v	v																									
55	Formulation and Technology of Sterile Dosage Forms Practice	v			v		v							v	v									v	v	v															
56	Pharmacy Industry													v	v	v	v	v	v															v		v					
57	Pharmaceutical Service				v	v						v										v	v			v	v	v	v			v				v					
58	Pharmaceutical Service practice				v		v	v	v			v										v	v													v					
59	Pharmacy Management															v	v	v	v	v	v							v		v	v						v		v			

No	MK Name	Study Materials (SM)																																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
60	Interprofessional Education 1	v			v							v										v	v									v				v	v				
61	Health Regulations and Laws			v																							v	v	v	v	v								v		
62	Method of Islamic Medicine	v																										v				v									
63	Drug Stability													v	v																			v								
64	Pharmacotherapy 4	v			v																v	v	v												v						
65	Pharmacotherapy Practice				v			v													v	v	v						v												
66	Research Proposal Seminar			v							v																														
67	Interprofessional Education 2	v			v							v										v	v										v				v	v				
68	Compounding and Dispensing				v									v	v				v	v										v				v		v					
69	Compounding and Dispensing Practice				v		v	v						v	v				v	v		v								v				v		v					
70	Hospital Pharmacy practice				v		v	v		v	v	v																						v							
71	Undergraduate Thesis			v	v	v	v					v																													
72	Analysis of Biomedic and Forensic																																		v						
73	Radiopharmaceuticals																																	v							
74	Cosmetology													v	v	v	v																	v							
75	Marine Natural Product																																	v							
76	Natural Product Technology																																	v							
77	Pharmacoeconomics and Pharmacovigilance					v																v	v													v					
78	Ethnopharmacy and Alternative Medicine																																	v	v						
79	Tissue Culture Technology																																		v						
80	Overdose and Poisoning Management																																			v					
81	Culture Cell Technology																																								
82	Pharmacoepidemiology					v																v	v													v					
83	Structure Elucidation																																	v							
84	Environmental Pharmacy																																					v			

No	MK Name	Study Materials (SM)																																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
85	Drug Design and Synthesis																																	v								
86	Drug Discovery																																	v								
87	Drug Delivery System																																	v								
		20	2	7	23	5	11	5	2	2	4	10	1	24	20	7	5	2	4	3	5	13	12	5	7	6	3	4	3	5	3	3	5	34	13	20	5	2	2	1	1	2

6 Course Formation and Determination of Semester Credit Units (SCU /ECTS)

Table . LO Matrix and Courses

Courses	Learning Outcomes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Semester 1																	
Pancasila and Civic Education		3															
Islamic Studies	3																
Qira'ah and Worship Practice	3						3										
Basic Science of Pharmacy	1												1	1	1		
Basic Science of Pharmacy Practice			1					1					1	1	1		
Biomedicine														3			
English					1	3											
Pharmaceutical Organic Chemistry													3				
Pharmaceutical Organic Chemistry Practice			1					1					1				
Semester 2																	
Indonesian Language		1			1	3											
Arabic Language	3					3											
Islam and Health Sciences	3										3						
Pharmaceutical Microbiology														3			
Pharmaceutical Microbiology Practice			1	1				2									
Pharmacognosy													3				
Pharmacognosy Practice			1					1									
Human Anatomy, Physiology and Pathophysiology	1													2			
Human Anatomy, Physiology and Pathophysiology practice			1											2			
Physical Pharmacy													3		2		
Physical Pharmacy Practice	1		1					1									
Semester 3																	
Phytochemistry 1													3				
Phytochemistry 1 Practice			1					1									
Pharmacology and Toxicology													3				

Courses	Learning Outcomes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Pharmacology and Toxicology Practice			1					1									
Medicinal Chemistry													3				
Physico-chemical analysis													3				
Basic Pharmaceutics													3		2		
Basic Pharmaceutics Practice			1					1		1							
Analysis of Raw Material								1		1			3		2		
Analysis of Raw Material Practice			1					1		1			3		2		
Pharmaceutical Biotechnology													3	2			
Semester 4																	
Pharmacotherapy 1	1							3	3						3		
Analysis of Pharmaceutical Preparation													3				
Analysis of Pharmaceutical Preparation Practice			1					1									
Formulation and Technology of Solid Dosage Forms								3					3		2		
Formulation and Technology of Solid Dosage Forms Practice			1	1				3		3							
Phytochemistry 2								1					3				
Phytochemistry 2 Practice			1	1				1									
Pharmacokinetics								2					3		2		
Biopharmaceutics								2					3		2		
Biopharmaceutics and Pharmacokinetics Practice			1	1				3		3							
Halal Product Guarantee System	2																3
Semester 5																	
Pharmacotherapy 2	1							3	3						3		
Entrepreneur and Digital Pharmacy	1			1		3											
Research Methodology and Biostatistics					3												
Analysis of Drug, Food and Cosmetic Halal	1																3
Analysis of Drug, Food and Cosmetic Halal Practice	2			1				1									3
Formulation and Technology of Liquid and Semi-Solid Dosage Forms								3					3		3		
Formulation and Technology of Liquid and Semi-Solid Dosage Forms Practice			1	1				3		3							
Information Education and Communication									3							3	

Courses	Learning Outcomes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
National Health System		1	1													3	
Phytotherapy	1												3				
Semester 6																	
Pharmacotherapy 3	1							3	3						3		
Formulation and Technology of Sterile Dosage Forms								3					3		2		
Formulation and Technology of Sterile Dosage Forms Practice	1		1	1				3		3							
Pharmacy Industry								3					3			3	
Pharmaceutical Service			1			3			3	3					2		
Pharmaceutical Service practice			1	1		3			3	3							
Pharmacy Management								3		3						3	
Interprofessional Education 1	1		1			3			3			3				3	
Health Regulations and Laws			1							2						3	
Method of Islamic Medicine	1										3						
Drug Stability								3					3				
Semester 7																	
Pharmacotherapy 4	1							3	3						3		
Pharmacotherapy Practice			1	1				3	3								
Research Proposal Seminar			1		3												
Interprofessional Education 2	1		1			3			3			3				3	
Compounding and Dispensing	1							3		.			3		2		
Compounding and Dispensing Practice			1	1				3		3							
Hospital Pharmacy practice			1	1		3		3	3	3		3					
Semester 8																	
Undergraduate Thesis			2	3	3			3									
Elective																	
Analysis of Biomedic and Forensic														v			
Radiopharmaceuticals													v				
Cosmetology													v				

Courses	Learning Outcomes																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Marine Natural Product													v				
Natural Product Technology													v				
Pharmacoeconomics and Pharmacovigilance			v						v							v	
Ethnopharmacy and Alternative Medicine													v				
Tissue Culture Technology														v			
Overdose and Poisoning Management															v		
Culture Cell Technology														v			
Pharmacoepidemiology			v						v						v	v	
Structure Elucidation													v				
Environmental Pharmacy													v				
Drug Design and Synthesis													v				
Drug Discovery													v				
Drug Delivery System								v					v				

Note: The numbers show how much each contributes to the Course Learning Outcomes (CLO): 3 = high, 2 = medium, 1 = low

7 Course Structure in the Study Program Curriculum

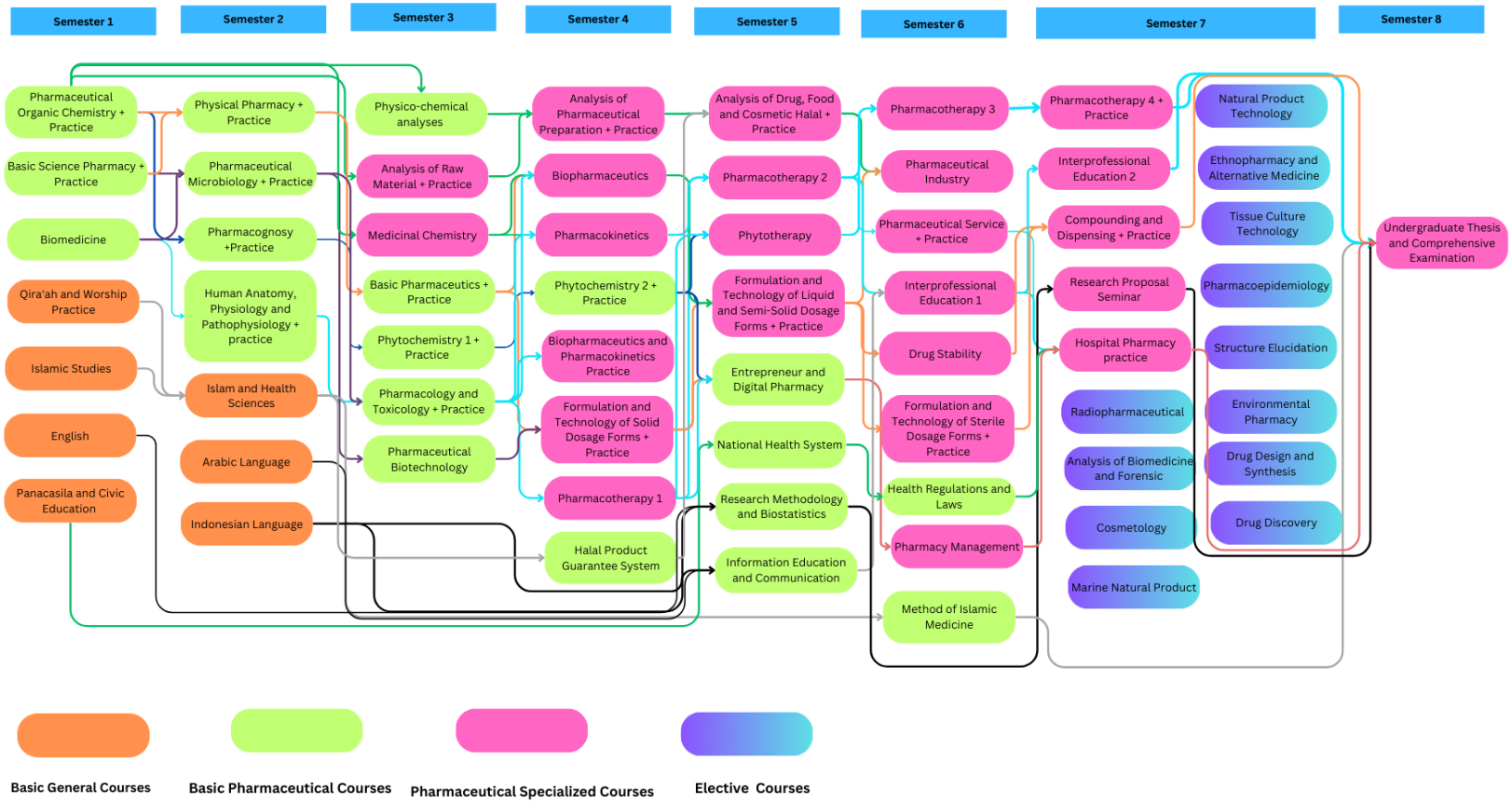
7.1 Curriculum Matrix

Table 10. Matrix of Course Structure in the Study Program Curriculum

Semester	Total SCU* / ECTS		COURSE GROUPS FOR UNDERGRADUATE		
		Curriculum Compulsory Courses	University Compulsory Courses	Study Program Compulsory Courses	Elective Courses
1	21 SCU / 35 ECTS	3 SCU/ 5 ECTS	9 SCU / 15 ECTS	9 SCU / 15 ECTS	-
2	21 SCU / 35 ECTS	3 SCU/ 5 ECTS	3 SCU/ 5 ECTS	15 SCU / 25 ECTS	-
3	19 SCU / 32 ECTS	-	-	19 SCU / 32 ECTS	-
4	20 SCU / 34 ECTS	-	-	20 SCU / 34 ECTS	
5	21 SCU / 35 ECTS	-		21 SCU / 35 ECTS	
6	20 SCU / 34 ECTS	-		20 SCU / 34 ECTS	
7	20 SCU/ 34 ECTS	-		10 SCU / 17 ECTS	10 SCU / 17 ECTS
8	5 SCU / 34 ECTS	-		5 SCU / 34 ECTS	
Total	**147 SCU / 245 ECTS**	**6 SCU / 10 ECTS**	**12 SCU / 20 ECTS**	**119 SCU / 199 ECTS**	**10 SCU / 17 ECTS**

*SCU: Semester Credit Unit

7.2 *Curriculum Map*



8 List of courses distributed each semester

Table 11. List of Courses for Semester I

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**NAS6112201**	Pancasila and Civic Education	3		5
2	**UIN6032201**	Islamic Studies	4		7
3	**UIN6032205**	Qira'ah and Worship Practice		2	3
4	**FIK6102101**	Basic Science of Pharmacy	3		5
5	**FIK6102102**	Basic Science of Pharmacy Practice		1	2
6	**FIK6102103**	Biomedicine	2		3
7	**UIN6014203**	English	3		5
8	**FIK6102104**	Pharmaceutical Organic Chemistry	2		3
9	**FIK6102105**	Basic Science of Pharmacy Practice		1	2
Total			17	4	35
Total Credits Semester I			**21**		**35**

Table 12. List of Semester II Courses

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**NAS6013202**	Indonesian Language	3		5
2	**UIN6021204**	Arabic Language	3		5
3	**FIK6102106**	Islam and Health Sciences	2		3
4	**FIK6102107**	Pharmaceutical Microbiology	3		5
5	**FIK6102108**	Pharmaceutical Microbiology Practice		1	2
6	**FIK6102109**	Pharmacognosy	2		3
7	**FIK6102110**	Pharmacognosy Practice		1	2
8	**FIK6102111**	Human Anatomy, Physiology and Pathophysiology	2		3
9	**FIK6102112**	Human Anatomy, Physiology and Pathophysiology practice		1	2
10	**FIK6102113**	Physical Pharmacy	2		3
11	**FIK6102114**	Physical Pharmacy Practice		1	2
Total			17	4	35
Total Credits Semester II			**21**		**35**

Table 13. List of Courses for Semester III.

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102115**	Phytochemistry 1	2		3
2	**FIK6102116**	Phytochemistry 1 Practice		1	2
3	**FIK6102117**	Pharmacology and Toxicology	3		5
4	**FIK6102118**	Pharmacology and Toxicology Practice		1	2
5	**FIK6102119**	Medicinal Chemistry	2		3
6	**FIK6102120**	Physico-chemical analyses	2		3
7	**FIK6102121**	Basic Pharmaceutics	2		3
8	**FIK6102122**	Basic Pharmaceutics Practice		1	2
9	**FIK6102123**	Analysis of Raw Material	2		3
10	**FIK6102124**	Analysis of Raw Material Practice		1	2
11	**FIK6102125**	Pharmaceutical Biotechnology	2		3
Total			**15**	**4**	**32**
Total Credit Semester III			**19**		**32**

Table 14.List of Courses in Semester IV

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102126**	Pharmacotherapy 1	4		7
2	**FIK6102127**	Analysis of Pharmaceutical Preparation	2		3
3	**FIK6102128**	Analysis of Pharmaceutical Preparation Practice		1	2
4	**FIK6102129**	Formulation and Technology of Solid Dosage Forms	2		3
5	**FIK6102130**	Formulation and Technology of Solid Dosage Forms Practice		1	2
6	**FIK6102131**	Phytochemistry 2	2		3
7	**FIK6102132**	Phytochemistry 2 Practice		1	2
8	**FIK6102133**	Pharmacokinetics	2		3
9	**FIK6102134**	Biopharmaceutics	2		3
10	**FIK6102135**	Biopharmaceutics and Pharmacokinetics Practice		1	2
11	**FIK6102136**	Halal Product Guarantee System	2		3
Total			**16**	**4**	**34**
	Total Credit Semester IV		**20**		**34**

Table 15. List of Courses for Semester V

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102137**	Pharmacotherapy 2	4		7
2	**FIK6102138**	Entrepreneur and Digital Pharmacy	2		3
3	**FIK6102139**	Research Methodology and Biostatistics	3		5
4	**FIK6102140**	Analysis of Drug, Food and Cosmetic Halal	2		3
5	**FIK6102141**	Analysis of Drug, Food and Cosmetic Halal Practice		1	2
6	**FIK6102142**	Formulation and Technology of Liquid and Semi-Solid Dosage Forms	2		3
7	**FIK6102143**	Formulation and Technology of Liquid and Semi-Solid Dosage Forms Practice		1	2
8	**FIK6102144**	Information Education and Communication	2		3
9	**FIK6102145**	National Health System	2		3
10	**FIK6102146**	Phytotherapy	2		3
Total			**19**	**2**	**35**
Total Credit Semester V			**21**		**35**

Table 16. List of Courses for Semester VI

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102147**	Pharmacotherapy 3	4		7
2	**FIK6102148**	Formulation and Technology of Sterile Dosage Forms	2		3
3	**FIK6102149**	Formulation and Technology of Sterile Dosage Forms Practice		1	2
4	**FIK6102150**	Pharmaceutical Industry	2		3
5	**FIK6102151**	Pharmaceutical Service	2		3
6	**FIK6102152**	Pharmaceutical Service practice		1	2
7	**FIK6102153**	Pharmacy Management	1		2
8	**FIK6102154**	Interprofessional Education 1	1		2
9	**FIK6102155**	Health Regulations and Laws	2		3
10	**FIK6102156**	Method of Islamic Medicine	2		3
11	**FIK6102157**	Drug Stability	2		3
Total			**18**	**2**	**34**
Total Credit Semester VI			**20**		

Table 17. List of Courses for Semester VII

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102158**	Pharmacotherapy 4	3		5
2	**FIK6102159**	Pharmacotherapy Practice		1	2
3	**FIK6102160**	Research Proposal Seminar	1		2
4	**FIK6102161**	Interprofessional Education 2	1		2
5	**FIK6102162**	Compounding and Dispensing	2		3
6	**FIK6102163**	Compounding and Dispensing Practice		1	2
7	**FIK6102164**	Hospital Pharmacy practice		1	2
8	-	Elective Courses	10		17
Total			**17**	**3**	**34**
Total Credit Semester VI			**20**		**34**

Table 18. List of Semester VIII Courses

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102165**	Undergraduate Thesis and Comprehensive Examination	5		8

Table 19 List of Elective Courses

No	Code	Courses	Credits (SCU)		ECTS
			Theory	Practice	
1	**FIK6102301**	Analysis of Biomedicine and Forensic	2		3
2	**FIK6102302**	Radiopharmaceutical	2		3
3	**FIK6102303**	Cosmetology	2		3
4	**FIK6102304**	Marine Natural Product	2		3
5	**FIK6102305**	Natural Product Technology	2		3
6	**FIK6102306**	Pharmacoeconomics and Pharmacovigilance	2		3
7	**FIK6102307**	Ethnopharmacy and Alternative Medicine	2		3
8	**FIK6102308**	Tissue Culture Technology	2		3
9	**FIK6102309**	Overdose and Poisoning Management	2		3
10	**FIK6102310**	Culture Cell Technology	2		3
11	**FIK6102311**	Pharmacoepidemiology	2		3
12	**FIK6102312**	Structure Elucidation	2		3
13	**FIK6102313**	Environmental Pharmacy	2		3
14	**FIK6102314**	Drug Design and Synthesis	2		3
15	**FIK6102315**	Drug Discovery	2		3
16	**FIK6102316**	Drug Delivery System	2		3

9 Curriculum management & implementation mechanism

1. **Planning**
   - **A. Identification of Needs**
     - **Environmental Analysis:**
       - Conducting surveys of the needs of the pharmaceutical industry, pharmacies, hospitals, and research institutions.
       - Professional associations and alumni should be involved to get input related to market needs.
     - **Student Needs:**
       - Identify the profile of S1 Pharmacy students, their interests, and talents.
       - Collect data on pharmacy education trends at the national and international levels.
     - **Education Policy:**
       - Refers to the national standards of higher education and competency standards for pharmacy graduates set by the government and professional associations.
       - Understand the regulations of the National Accreditation Board for Higher Education (BAN-PT) and the Indonesia Association of Pharmaceutical Higher Education (APTFI).

   - **B. Curriculum Preparation**
     - **Educational Objectives:**
       - Formulating the S1 Pharmacy program's educational objectives, including mastery of pharmaceutical science, laboratory skills, research ability, and professional ethics.
     - **Formulation of Graduate Profiles and Graduate Learning Outcomes**
       - LO is compiled based on the KKNI curriculum combined with the policies of the Study Program.
     - **Curriculum Structure:**
       - Designing a curriculum structure with core courses, elective courses, fieldwork practice (PKL), research, and thesis.
       - Determine the time allocation for theory, practicum, seminars, and research.

2. **Implementation**
   - **A. Preparation of Lecturers and Resources**
     - **Lecturer Training:**
       - Conducting training and workshops for lecturers on the latest teaching methods, learning technology, and developments in pharmaceutical science.
     - **Provision of Learning Resources:**
       - Provide textbooks, scientific journals, access to scientific databases, laboratory tools and materials, and pharmaceutical-related software.

B. Learning Process

- **Learning Methods:**
  - Implement active learning methods such as problem-based learning (PBL), project-based learning (PjBL), and case studies.
- **Teaching and Learning Activities:**
  - Prepare a Semester Learning Plan for each course, including learning objectives, materials, methods, and assessments.
  - Conduct teaching and learning activities involving lectures, practicums, group discussions, seminars, and research.
- **Classroom Management:**
  - Creating a conducive learning environment with facilities that support learning, such as well-equipped laboratories and discussion rooms.

3. Evaluasi (Evaluation)

A. Assessment of Learning Outcomes

- **Formative Assessment:**
  - Conduct formative assessments through quizzes, assignments, and presentations to monitor student progress on a regular basis.
- **Summative Assessment:**
  - Conduct summative assessments through midterm exams, final semester exams, practicum reports, and theses.

B. Curriculum Evaluation

- **Feedback from Lecturers and Students:**
  - Collect feedback from lecturers and students regarding the implementation of the curriculum through questionnaires and focus group discussions (FGD).
- **Learning Outcome Analysis:**
  - Analyze learning outcome data to assess the achievement of the set competencies.

4. Control

A. Monitoring

- **Periodic Monitoring:**
  - The curriculum implementation is monitored periodically by the study program's internal quality control team.
- **Supervision by the Dean and Head of Study Program:**
  - The Dean and Head of the Study Program supervise to ensure that the curriculum is implemented in accordance with the set plans and standards.

B. Corrective Action

- **Problem Identification:**
  - Identify problems or obstacles in the implementation of the curriculum through monitoring and evaluation.
- **Adjustment:**
  - Make adjustments or improvements to the curriculum based on the monitoring and evaluation results and input from stakeholders.

5. **Improvement**
   A. **Evaluation Follow-up**
      - **Curriculum Development:**
        - Using the evaluation results to develop and improve the curriculum on an ongoing basis.
      - **Learning Innovations:**
        - Develop innovations in learning methods and techniques based on the latest trends in pharmacy education.

   B. **Improving Lecturer Competence**
      - **Advanced Training:**
        - Provide advanced training and opportunities for lecturers to participate in seminars, workshops, and scientific conferences in the field of pharmacy.
      - **Community Practice:**
        - Forming a community of practice for lecturers to share experiences and effective learning strategies.

Implementation Mechanism

1. **Curriculum Team Formation:**
   - Forming a curriculum team consisting of the head of the study program, lecturers
2. **Curriculum Socialization:**
   - Socialize all lecturers, students, and staff about the curriculum to be implemented.
3. **Workshops and Training:**
   - Conducting workshops and training for lecturers on learning strategies, assessment, and effective use of learning resources.
4. **Monitoring and Evaluation:**
   - Conduct regular monitoring and evaluation to ensure that the curriculum runs according to plan and achieves the desired goals.
5. **Reports and Follow-ups:**
   - Prepare a report on the results of the evaluation and carry out follow-up to improve and improve the quality of the curriculum.

10 Semester Learning Plan (RPS)

SEMESTER LEARNING PLAN
COURSE/MODULE: PHYTOCHEMISTRY 2
COURSE CODE :

Universitas Islam Negeri
SYARIF HIDAYATULLAH JAKARTA

Lecturer in Charge:
Apt. Ismiarni Komala. M.Sc., PhD

Teaching Team Members:
apt. Vivi Anggia., M.Farm

VALIDATION SHEET

The undersigned is the Head of the Bachelor of Pharmacy Study Program, who states that the Semester Learning Plan (RPS):

Course name	: Fitbit 2
Code	: FIK6102104
Name of the Lecturer in Charge	: apt. Ismiarni Komala., M.Sc., PhD

has been examined and is suitable for use in student learning in semester 1, academic year 2021 at the Bachelor of Pharmacy Study Program FIKES UIN Syarif Hidayatullah Jakarta on February 1, 2021

Created by: Developer Lecturer	Approved by: Head of Bachelor of Pharmacy Study Program
Apt. Name Coma. PhD. NIP. 197806302006042001	Apt. Ismiarni Komala, PhD. NIP. 197806302006042001

VISION, MISSION AND OBJECTIVES OF THE PHARMACY STUDY PROGRAM
FACULTY OF HEALTH SCIENCES
UIN SYRAIF HIDAYTULLAH JAKARTA

VISION

To become a distinguished provider of pharmaceutical undergraduate education, the integration of pharmaceutical science development with Islamic values and Indonesian cultural wisdom will enable competitiveness at both national and international levels by 2025.

MISSION

1. Deliver-quality pharmaceutical undergraduate education is based on Islamic values and Indonesian cultural knowledge.
2. Conduct research in the field of pharmacy utilizing Indonesian natural resources that meet the halal criteria.
3. Engaging in community services based on research outcomes in the field of pharmacy.
4. Establish productive and sustainable tridharma cooperation with national and international pharmaceutical-related institutions.
5. Provide an opportunity for graduates of religious schools (madrasah/pesantren) to obtain high-quality pharmaceutical higher education.

OBJECTIVES

1. Produce pharmacy graduates with Islamic integrity in performing pharmaceutical work, capable of competing nationally and internationally, and proficient in applying halal aspects in the pharmaceutical field.
2. Develop a well-governed education system encompassing transparent, accountable, accurate, and efficient planning, implementation, evaluation, and sustainable development.
3. Generate research outcomes in the field of pharmacy and halal product development applicable to the community.
4. Possess the ability to actively contribute to providing solutions to pharmaceutical issues and halal aspects for the community.
5. Foster good cooperation with various stakeholders in education, research, and community engagement

GRADUATE PROFILE

The graduate profile of the Pharmacy Study Program, Faculty of Health Sciences, UIN Syarif Hidayatullah Jakarta, aims to become a globally reputable pharmacist with the excellence of integrating Islamic knowledge, Indonesian values, and scientific competence in the pharmaceutical profession. The Educational Objective (PEO) Program details are as follows: Table 3.

Tabel 3. *Program Educational Objective* (PEO)

***Program Educational Objective* (PEO)**	**Indicator**
PEO-1: Producing pharmacy graduates who are faithful and pious, continuously learn and develop competencies throughout their lives.	- 100% of graduates practice Islamic values in carrying out pharmaceutical work. - 5% of graduates engage in self-development through formal education, training, and courses.
PEO-2: Producing competent Pharmacy graduates who actively contribute to the pharmaceutical job sector.	- 10% of graduates work in accordance with pharmaceutical expertise. - 2% Achieving accomplishments in their job track record.
PEO-3: Producing Pharmacy graduates with strong leadership skills, capable of making swift decisions.	- 2% of graduates Hold leadership positions in their workplace. - 2% Involvement in organizations.
PEO-4: Producing Pharmacy graduates with creativity and innovation in pharmaceutical work, as well as being responsive to opportunities and capable of utilizing them for professional enhancement.	- 2% of graduates become entrepreneurs in the pharmaceutical field. - 5% of graduates actively participate in professional development within their community.
PEO-5: Producing Pharmacy graduates who are caring and courteous in their service, capable of professional communication, and able to impart their experiences and competencies to the next generation.	- 2% of graduates become preceptors. - 2% of graduates become speakers in various activities. - 2% of graduates are involved in community social activities.
PEO-6 Producing Pharmacy graduates who can contribute to the assurance process of halal pharmaceuticals, food, and cosmetics.	- 2% of graduates work in institutions related to halal pharmaceuticals, food, and cosmetics assurance.

10.1 Learning Outcome formulation

Table 4. Learning Outcomes (LO)

Learning Outcomes	Description
Attitude Aspect	
LO-1	Graduates are capable of demonstrating a devout attitude towards the Almighty God and upholding human values when performing pharmaceutical work.
LO-2	Graduates are able to demonstrate a sense of nationalism by collaborating and contributing to national and state life.
LO-3	Graduates are capable of demonstrating obedience to law, discipline, responsibility, and internalizing values, norms, and academic ethics in societal and national life.
General skills Aspect	
LO-4	Graduates can work independently and systematically, make documents, evaluate them to make informed decisions and generate solutions and ideas in the pharmaceutical field.
LO-5	Graduates are capable of designing, conducting, and writing research reports for the development of pharmaceutical science.
LO-6	Graduates are able to collaborate and build networks to develop entrepreneurial ideas, as well as career and self-development in the pharmaceutical field, and they can communicate effectively in Indonesian, English, and Arabic.
LO-7	Graduates are able to read the Quran and practice religious rituals.
Specific skills Aspect	
LO-8	Graduates can identify and solve drug-related problems using evidence-based approaches in the design, preparation, distribution, management, and/or service of pharmaceutical preparations to optimize therapeutic success.
LO-9	Graduates are able to search, critically analyze, and organize information about pharmaceutical preparations, and effectively communicate with individuals and communities.
LO10	Graduates are capable of performing pharmaceutical work under the supervision of a pharmacist responsibly, according to applicable laws and ethical codes.
LO-11	Graduates are equipped to apply comprehensive Islamic medical practices for health preservation, treatment, and well-being, and can also identify and assess the halal status of products like medicines, food, and cosmetics.
LO12	Graduates are able to collaborate effectively with other healthcare professionals to enhance their healthcare services.

Learning Outcomes	Description
Knowledges Aspect	
LO-13	Graduates are able to master the theories, methods, and applications of pharmaceutical science (pharmaceutics, pharmaceutical chemistry, pharmacognosy, pharmacology).
LP-14	Graduates are able to grasp the concepts and applications of biomedical science (biology, human anatomy, microbiology, physiology, pathophysiology, biomedical ethics and biostatistics).
LO-15	Graduates are able to understand concepts in pharmacotherapy, pharmaceutical care, pharmacy practice, as well as principles of pharmaceutical calculations, pharmacoepidemiology, evidence-based medicine, and pharmacoeconomics.
LO-16	Graduates are able to understand pharmacy management, socio-pharmacy, pharmacy law and ethics, communication techniques, and basic principles of occupational safety.
LO-17	Graduates are able to comprehend methods of Islamic treatment, governance of halal assurance systems, ways of identifying and analyzing the halal status of raw materials, processes, and pharmaceutical, food and cosmetic products.

I. LESSON PLAN

1.1. Semester Learning Plan (RPS)

<table>
<tr><td></td><td colspan="6">UIN SYARIF HIDAYATULLAH JAKARTA
FACULTY OF HEALTH SCIENCES
PHARMACY STUDY PROGRAM</td><td>Document Code</td></tr>
<tr><td colspan="8">SEMESTER LESSON PLAN</td></tr>
<tr><td colspan="2">COURSES (MK)</td><td>CODE</td><td>Constitutional Court</td><td colspan="2">BOBOT (scu)</td><td>SEMESTER</td><td>Drafting Date</td></tr>
<tr><td colspan="2">Phytochemistry 2</td><td>FIK6102131</td><td>Basic Sciences / Pharmaceutical Biology Course</td><td>T=2</td><td>P=0</td><td>4</td><td>March 1, 2024</td></tr>
<tr><td colspan="2">AUTHORIZATION</td><td colspan="2">RPS Developer</td><td colspan="2">Coordinator of the RMC</td><td colspan="2">Head of Study Program</td></tr>
<tr><td colspan="2"></td><td colspan="2">apt. Ismiarni Komala,M.Sc., PhD
apt. Vivi Anggia., M.Si</td><td colspan="2">apt. Ismiarni Komala,M.Sc., PhD</td><td colspan="2">apt. Ismiarni Komala,M.Sc., PhD</td></tr>
<tr><td rowspan="8">Learning Outcomes (CP)</td><td colspan="3">LO-Study Programs charged to the Constitutional Court</td><td colspan="4"></td></tr>
<tr><td>KK</td><td>LO8</td><td colspan="5">Graduates can identify and solve drug-related problems using evidence-based approaches in the design, preparation, distribution, management, and/or service of pharmaceutical preparations to optimize therapeutic success.</td></tr>
<tr><td>P</td><td>LO13</td><td colspan="5">Graduates are able to master the theories, methods, and applications of pharmaceutical science (pharmaceutics, pharmaceutical chemistry, pharmacognosy, pharmacology).</td></tr>
<tr><td colspan="3">LO Þ Course Learning Outcomes (CPMK)</td><td colspan="4"></td></tr>
<tr><td>LO13</td><td>CPMK1</td><td colspan="5">Able to apply physical and chemical properties, pharmacological activities, isolation principles and techniques, as well as biosynthesis of terpenoid compounds, essential oils, glycosides, fatty acids, polyketides, peptides in understanding the principles of pharmaceutical procedures in pharmaceutical practice</td></tr>
<tr><td>LO8</td><td>CPMK2</td><td colspan="5">Able to solve problems related to the physical and chemical properties of medicinal plant content in the production of herbal drugs / cosmetics</td></tr>
<tr><td colspan="3">CLOÞ Sub-CPMK</td><td colspan="4"></td></tr>
<tr><td>CPMK1</td><td>subCPMK1</td><td colspan="5">Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of terpenoid compounds in understanding pharmaceutical procedures in pharmaceutical practice</td></tr>
</table>

		subCPMK2	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, as well as biosynthesis of essential oil compounds in understanding pharmaceutical procedures in pharmaceutical practice
		subCPMK3	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of glycoside compounds in understanding pharmaceutical procedures in pharmaceutical practice
		subCPMK4	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of carbohydrate compounds in understanding pharmaceutical procedures in pharmaceutical practice
		subCPMK5	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, as well as biosynthesis of fatty acid compounds in understanding pharmaceutical procedures in pharmaceutical practice
		subCPMK6	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of polyketide compounds in understanding pharmaceutical procedures in pharmaceutical practice
		SubCPMK7	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of peptide compounds in understanding pharmaceutical procedures in pharmaceutical practice
		SubCPMK8	Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of protein compounds in understanding pharmaceutical procedures in pharmaceutical practice
	CPMK2	SubCPMK9	Able to solve problems related to the physical and chemical properties of terpenoids and medicinal essential oils in the production of herbal drugs / cosmetics
		SubCPMK10	Able to solve problems related to the physical and chemical properties of glycosides, fatty acids, carbohydrates, polyketides and drug peptides in the production of herbal medicines/cosmetics
Brief Description of MK	This course is a course for S-1 Bachelor of Pharmacy students. Phytochemistry 2 is studied to study physicochemical properties, isolation principles and techniques, as well as the biosynthesis of terpenoid compounds, essential oils, glycosides, fatty acids, polyketides, peptides so that they can be applied in understanding the principles of pharmaceutical procedures in pharmaceutical practice.		
Study Materials / Learning Materials	1. Overview of terpenoids 2. Hemiterpenoids and monoterpenoids 3. Sesquiterpenoids and diterpenoids 4. Triterpenoids and tetraterpenoids 5. Essential oils 6. Application of the physical and chemical properties of terpenoids and essential oils in pharmaceutical procedures 7. Glikosida 8. Carbohydrates		

	9. Asam lemak 10. Polyketide 11. Peptides 12. Application of the physical and chemical properties of glycosides, carbohydrates, fatty acids, polyketides and peptides in pharmaceutical procedures
Book	**Utama:**
	1. Breitmer, E. (2008) Breitmaier. Terpenes. Wiley-VCH, Germany 2. Paul M Dewick, " Medicinal Natural Products : A Biosynthetic Aproach", 3th edition Jons wiley & sons, New York, 2009. 3. Li, Ying, Fabiano-Tixier, A, Chemat, F. Essential oils as a reagent, Springer 2014. 4. Sell, C. S. (2003) *A Fragrant Introduction to Terpenoid Chemistry*. United Kingdom: The Royal Society of Chemistry. 5. Cheng, A.-X. *et al.* (2007) 'Plant Terpenoids:Biosynthesis and ecological functions', *Journal of Integrative Plant Biology*, 49(2), pp. 179–186. doi: 10.1111/j.1672-9072.2006.00395.x. 6. Yang, W. *et al.* (2020) 'Advances in Pharmacological Activities of Terpenoids', *Natural Product Communications*, 15(3). doi: 10.1177/1934578X20903555. 7. Koziol, A. *et al.* (2014) 'An Overview of the Pharmacological Properties and Potential Applications of Natural Monoterpenes', *Mini-Reviews in Medicinal Chemistry*, 14(14), pp. 1156–1168. doi: 10.2174/1389557514666141127145820. 8. Elshafie, H. S. and Camele, I. (2017) 'An overview of the biological effects of some mediterranean essential oils on human health', *BioMed Research International*, 2017. doi: 10.1155/2017/9268468. 9. Aziz, Z. A. A. *et al.* (2018) 'Essential Oils: Extraction Techniques, Pharmaceutical And Therapeutic Potential - A Review', *Current Drug Metabolism*, 19(13), pp. 1100–1110. doi: 10.2174/1389200219666180723144850. 10. AIRASE, T. A. for the I. R. of A. S. and E. (2015) 'Extraction Methods of Essential Oils', *Airase*, (February), pp. 1–13. doi: 10.13140/RG.2.2.18744.34564. 11. Handa, SS, Khanuja, SPS, Longo, G, Rakesh, DD. Extraction technologies for Medicinal& aromatic plants 12. Turek, C. and Stintzing, F. C. (2013) 'Stability of essential oils: A review', *Comprehensive Reviews in Food Science and Food Safety*, 12(1), pp. 40–53. doi: 10.1111/1541-4337.12006. 13. Li, Y. and Chemat, F. *Essential Oils as Reagents in Green Chemistry*. *SPRINGER BRIEFS IN MOLECULAR SCIENCE* 14. Trease And Evans (2019) Pharmacognosy,16th Edition. Elsevier, ISBN: 978-8131261187. 15. Yang, Z., Uhler, B., Lipkie, T. (2019). Microwaved-Assisted Subcritical Water Extraction of Steviol-glycosides From Stevia rebaudiana Leaves. *Nat. Prod. Comm.* 1-4 16. Manisha, S., Preeti, P., Palpu, P., Ajit, V., Harsha, K. (2014) Phytochemical Analysis of Glycosides from Leaves of *Trigonella foenum graecum.* Int. J. Pharm. Sci. Rev. Res. 29: 1 (28) : 146-152. 17. Huang, N., Yu, D., Wu, J., Du, X. (2022). Diosgenin: an important pharmaceutical active ingredient. Food Science and Technology, Campinas. 42. 94521. 18. Di, X., Liang, X., Shen, C., Pei, Y., Wu, B., He, Z. (2022). Carbohydrate used in Polymeric Systems of Drug Delivery: From Structures to Applications. Pharmaceutics. 14. 739. 19. Hewavitharana, G.G., Perera, D.N., Navaratne, S.B., Wickramasinghe, I. (2020) Extraction Methods of Fat from Food Samples and Preparation of Fatty Acid Methyl Esters for Gas Chromatography: a review. Arabian Journal of Chemistry. 13: 6865-6875.

	20. Agregan, R., Popova, T., Lopez-Pedrouso, M., Cantalapiedra, J., Lorenzo, M., Franco., D. (2022) Chapter 12: Fatty Acids. Elsevier. 21. Hackett, M.J., Zaro, J.L., Shen, W.C., Guley, W.C., Cho, M.J. (2013). Fatty Acids as Therapeutic Auxiliaries for Oral and Parenteral Formulations. Adv. Drug Delivery Rev. 65(10): 1331-1339. 22. Berrios, R.R.R. et al. (2023). Extraction, Isolation, Characterization, and Bioactivity of Polypropionates and Related Polyketide Metabolites from The Carribean Region. Antibiotics. 12. 1087. 23. Olivares-Galvan, S., Marina, M.L., Garcia, M.C. (2020) Extraction and Characterization of Antioxidant Peptides from Fruit Residues: Review. *Foods:* 9: 1018 24. Purohit, K., Reddy, N., Sunna, A. (2024) Exploring the Potential of Bioactive Peptides: From Natural Sources to Therapeutics: Review. *International Journal of Molecular Sciences*. 25:1391. 25. Saurabh, P., Krititika, G., Ashish, P., Bhushan, D., Siegfried, G., Prajakta, D., Ratnesh, J. (2021). International Journal of Peptide Research and Therapeutics. Springer. 26. Kaservani, R.K., Sharma, A.K., Jarouliya, U. (2015). Protein and Peptide in Drug Targeting and Its Targeting Approach. Ars Pharmaceutica. 56(3): 165-177. 27. Ibrahim, A., Akasha, Lydia C., Stephen R. Euston. (2012) Extraction and Characterization of Protein Fraction from Date Palm Fruit Seeds. International Journal of Nutrition and Food Engineering. 6(10). 28. Jitendra, Y., Nehete. Rajendra, S.B., Minal, R. N., Sonali, R.G. (2013) Natural proteins: Source, isolation, characterization, and applications. Pharmacognosy review. 7(14). 29. Akers, M.J., Vasudevan, V., Stickelmeyer, M. (2002). Development and Manufacture of Protein Pharmaceuticals: Formulation Development of Protein Dosage Forms. Kluwer Academic/ Plenum Publishers. NewYork. 30. Wang, W. Ohtake, S. (2019). Science and Art of Protein Formulation Development. International Journal of Pharmaceutics. **Support:** 1. Komala, I. *et al.* (2010) 'Zierane sesquiterpene lactone, cembrane and fusicoccane diterpenoids, from the Tahitian liverwort Chandonanthus hirtellus', *Phytochemistry*, 71(11–12), pp. 1387–1394. doi: 10.1016/j.phytochem.2010.04.023. 2. Komala, I., Ito, T., Nagashima, F., Yagi, Y. and Asakawa, Y. (2010) 'Cytotoxic, radical scavenging and antimicrobial activities of sesquiterpenoids from the Tahitian liverwort Mastigophora diclados (Brid.) Nees (Mastigophoraceae)', *Journal of Natural Medicines*, 64(4), pp. 417–422. doi: 10.1007/s11418-010-0423-8.
Lecturer	apt. Ismiarni Komala,M.Sc., PhD apt. Vivi Anggia., M.Si
Required Courses	Have attended a phytochemistry 1

Week	Sub-CPMK (Final ability of each stage of learning)	Valuation		Learning Form (BP), Learning Methods (MP), Student Assignment, [Estimated Time]		Learning Materials [Bibliography]	Assessment percentage (%)
		Indicator	Techniques & Criteria	Luring (*offline*)	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1-4	Sub-CPMK1: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of terpenoid compounds in understanding pharmaceutical procedures in pharmaceutical practice	Thorough in - Identification and classification of terpenoid compounds based on the framework they possess - Explain the role of terpenoids in nature. - Describe the biosynthesis pathway of terpenoid compounds - Apply the physical and chemical properties of terpenoid compounds in the extraction, isolation and understanding of pharmaceutical procedures.	- Mid-Semester Exam: MCQ - Structured tasks / Quis Criterion A = 80-100 B = 70-79 C= 60-69 Below 60 must repeat Assignment: Assessment rubric	**Form of Learning**: Lecture **Learning method**: Lecture Face-to-Face: [4x(2x50min)] **Independent learning**: reading the teaching materials that have been given [4x(2x60min)] **Structured assignments**: [4x(2x60min)] - Creating a paper on pharmaceutical preparations containing terpenoid compounds - Creating a paper on the	**Learn independently** with the youtube videos provided	**Terpenoid** - Definition, structure and classification of Terpenoids - The role of terpenoids in nature - Hemiterpenoids and monoterpenoids - Sesquiterpenoids and diterpenoids - Triterpenoids and tetraterpenoids [1-8]	28 %

				physicochemical properties of monoterpenoids - Creating a paper on sesquiterpenoid compounds that have the ability of Permeation Enhancers - Generate summaries from journals on the stability of diterpenoid/triterpenoid compounds			
5-6	Sub-CPMK2: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of essential oil compounds in understanding pharmaceutical procedures in	Thorough in: - Explain the historical definition and relationship between essential oils, and the history of scientific development in Islam. - Identification of the chemical components of essential oils - Applying the physicochemical properties of	- Mid-Semester Exam: Test MCQ - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69 Below 60 must repeat	**Form of Learning**: Lecture **Learning method**: Lecture Face-to-Face: [2x(2x50min)] **Independent learning** : reading the teaching materials that have been given [2x(2x60min)] **Structured assignments**:	**Self-study:** Watch videos about essential oil extraction techniques on youtube	**Essential oils** - Definition, history and relationship with the development of Islamic science - Chemical components of essential oils and how to detect them - Benefits and applications of essential oils in the field of Pharmacy - Essential oil extraction techniques: Hydrodistillation, cold	14 %

	pharmaceutical practice	pharmacological and essential oil component activities in understanding pharmaceutical procedures		[2x(2x60min)] - Creating a paper on Essential oils as aromatherapy		press extraction, Enflulation [9-14]	
7	Sub-CLO8: Able to solve problems related to the physical and chemical properties of terpenoids and essential oils in the production of herbal medicines/cosmetics	Thorough in - Correlate the physical and chemical properties of terpenoid compounds and essential oils in the production planning process of herbal medicines/cosmetics	Structured tasks Presentations with themes: - Influence of physical and chemical properties of terpenoids in the formulation of drug/cosmetic preparations	**Learning Form:** Lecture **Learning method**: Presentation per group Discussion and presentation : [1x(170 minutes)]	**Self-study:** Group study about the influence of the physical and chemical properties of terpenoids and essential oils in the formulation of herbal medicines/cosmetics	- Herbal stability - Herbal formulations	8 %
8	UTS						
9	Sub-CPMK3: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of glycoside compounds	Thorough in: - Identification and classification of glycoside group compounds based on their framework - Explaining the role of glycoside compounds in the	- Final Semester Exam: Test MCQ (UTS) - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69 Below 60 must repeat	**Form of Learning**: Lecture **Learning method**: Lecture Layout: [1x(2x50min)] **Self-study**: [1x(2x60min)]	**Self-Study:** Study independently with the material that has been given before lectures	Glikosida - Definition, types of bonds and glycoside biosynthesis - Physicochemical properties, polaritads and glycoside solubility - Identification and isolation of	**7%**

	in understanding pharmaceutical procedures in pharmaceutical practice	field of Pharmaceuticals - Describe the biosynthesis pathway of glycoside compounds - Apply the physical and chemical properties of glycoside compounds in the extraction, isolation and understanding of pharmaceutical procedures.		Read the teaching materials that have been given **Structured assignments**: [1x(2x60min)] - Creating a paper on the physicochemical properties of glycoside compounds - Produce papers on pharmaceutical preparations containing glycosides that have been developed on the market and their natural sources		glycosides from plants - Examples of glycosylated and their producing plants - Uses of glycosides in the field of Pharmacy - Glycosides in Islam **[14-17]**	
10	Sub-CPMK4: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and	Thorough in: - Identify and classify carbohydrate group compounds based on their framework - Explaining the role of	- Final Semester Exam: Test MCQ - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69	**Form of Learning**: Lecture **Learning method**: Lecture Layout: [1x(2x50min)] **Self-study**: [1x(2x60min)]	**Self-Study:** Study independently with the material that has been given before lectures	**Carbohydrates** 1. Carbohydrates in plants 2. Types of bonds 3. Types of aglicons and examples of compounds	

	biosynthesis of carbohydrate compounds in understanding pharmaceutical procedures in pharmaceutical practice	carbohydrate compounds in the field of Pharmacy - Describe the biosynthesis pathway of carbohydrate compounds - Apply the physical and chemical properties of carbohydrate compounds in the extraction, isolation and understanding of pharmaceutical procedures.	Below 60 must repeat	Read the teaching materials that have been given **Structured assignments**: [1x(2x60min)] - Produce papers on the use of carbohydrates that have been developed in pharmaceutical preparations and additives and their sources of production - Produce papers on the physicochemical properties of carbohydrates that have been developed in pharmaceutical preparations		4. Chemical properties and hydration of Carbohydrates 5. Polarity and solubility 6. Detection by color 7. Paper chromatography and KLT 8. Isolation of carbohydrates from plants 9. Carbohydrate applications in pharmaceutical **[14, 18]**	
11	Sub-CLO5: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of fatty	Thorough in: - Identification and classification of fatty acid group compounds based on their framework - Explaining the role of fatty acid	- Final Semester Exam: MCQ - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69	**Form of Learning**: Lecture **Learning method**: Lecture Layout: [1x(2x50min)] **Self-study**: [1x(2x60min)]	**Self-Study:** Study independently with the material that has been given before lectures	**Asam lemak** 1. Definition 2. Structure and types 3. Biosynthesis of fats 4. Saturated Fatty Acids 5. Unsaturated fatty acids	**7 %**

	acid compounds in understanding pharmaceutical procedures in pharmaceutical practice	compounds in the field of Pharmacy - Describes the biosynthesis pathway of fatty acid compounds - Apply the physical and chemical properties of fatty acid compounds in the extraction, isolation and understanding of pharmaceutical procedures.	Below 60 must repeat	Reading the teaching materials that have been given **Structured assignments**: [1x(2x60min)] - Creating a paper on the stability of pharmaceutical preparations containing fatty acids - Creating a paper on pharmaceutical preparations containing fatty acids		6. Fatty acid content in plants **[14, 19-21]**	
12	Sub-CPMK6: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and	Thorough in: - Identification and classification of fatty acid group compounds based on their framework - Explaining the role of fatty acid	- Final Semester Exam: MCQ - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69	**Form of Learning**: Lecture **Learning method**: Lecture Layout: [1x(2x50min)] **Independent learning**: reading the	**Self-Study:** Study independently with the material that has been given before lectures	**Polyketide** 1. Definition 2. Biosynthesis polytechnics 3. Basic structure, types and examples of compounds 4. Physical and Chemical Properties	**7%**

	biosynthesis of polyketide compounds in understanding pharmaceutical procedures in pharmaceutical practice	compounds in the field of Pharmacy - Describes the biosynthesis pathway of fatty acid compounds Apply the physical and chemical properties of fatty acid compounds in the extraction, isolation and understanding of pharmaceutical procedures.	Below 60 must repeat	teaching materials that have been given [1x(2x60min)] **Structured assignments**: - Drafting a paper on the stability of pharmaceutical preparations containing polyketic acid [1x(2x60min)]		5. Polyketide detection and isolation 6. The role of polyketides in the field of Pharmacy **[14, 22]**	
13	Sub-CLO7: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of peptide compounds in understanding pharmaceutical procedures in pharmaceutical practice	Thorough in: - Identify and classify peptide compounds based on their skeleton - Explaining the role of peptide compounds in the field of Pharmacy - Describe the biosynthesis pathway of peptide compounds	- Final Semester Exam: MCQ - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69 Below 60 must repeat	**Form of Learning**: Lecture **Learning method**: Lecture Layout : [1x(2x50min)] **Independent learning** : reading the teaching materials that have been given [1x(2x60min)] **Structured assignments**:	**Self-Study:** Study independently with the material that has been given before lectures	**Peptide** 1. Definition 2. Biosintesa 3. Breakdown by structure 4. Physical and chemical properties 5. Detection and isolation 6. Application of peptides in pharmaceuticals 7. Peptides in Islam **[14, 23-26]**	**7 %**

		- Apply the physical and chemical properties of peptide compounds in the extraction, isolation and understanding of pharmaceutical procedures.		- Creating a paper on the stability of pharmaceutical preparations containing peptides - Creating a paper on pharmaceutical preparations containing peptides [1x(2x60min)]			
14	Sub-CLO8: Students are able to apply physicochemical properties, pharmacological activities, isolation principles and techniques, and biosynthesis of protein compounds in understanding pharmaceutical procedures in pharmaceutical practice	Thorough in: - Identification and classification of protein group compounds based on their framework - Explaining the role of protein compounds in the field of Pharmacy - Describe the biosynthesis pathway of	- Final Semester Exam: MCQ - Structured tasks / Quis Criterion: A = 80-100 B = 70-79 C= 60-69 Below 60 must repeat	**Form of Learning**: Lecture **Learning method**: Lecture Layout: [1x(2x50min)] **Independent learning** : reading the teaching materials that have been given [1x(2x60min)] **Structured assignments**:	**Self-Study:** Study independently with the material that has been given before lectures	**Proteins and amino acid derivatives in plants** 1. Definition 2. Function and existence in plants 3. Biosynthesis 4. Penggolongan 5. Detection and isolation of plants 6. Benefits in the field of Pharmacy Reference: [14, 26-30]	**7%**

		protein compounds - Apply the physical and chemical properties of protein compounds in the extraction, isolation and understanding of pharmaceutical procedures.		- Papers on the stability of pharmaceutical preparations containing proteins - Creating a paper on pharmaceutical preparations containing proteins [1x(2x50min)]			
15	Sub-CMPK 10: Able to solve problems related to the physical and chemical properties of glycosides, fatty acids, carbohydrates, polyketides and peptides and proteins in the production of herbal drugs/cosmetics	Thorough in: Correlate the physical and chemical properties of glycoside compounds , fatty acids, carbohydrates, polyketides and proteins in the production planning process of herbal drugs/cosmetics	Structured tasks Presentations with themes: Making a paper on the design/recommendation for the development of herbal preparations containing glycosides, carbohydrates, fatty acids, polyketide peptides, and proteins.	**Learning Form:** Lecture **Learning method**: Presentation per group Discussion and presentation: [1x(170 minutes)]	**Self-study:** Study in groups about the influence of the physical and chemical properties of glycosides, carbohydrates, fatty acids, peptides, polyketides and proteins in the formulation of herbal medicine/cosmetic preparations	**Reference:** **[17-18, 21-22, 26, 30]**	8 %
16	UAS						

Valuation

Meeting Week	LO	CPMK	Sub-CPMK	Assessment Instruments	Weight (%)
1-4	3	1	1	Task 1	2
				Task 2	2
				Task 3	2
				Task 4	2
				UTS: MCQ	20
5-6	3	1	2	Task 1	4
				UTS: MCQ	10
7	9	2	9	Presentation	8
UTS					
9	3	1	3	Assignment	2
				UTS: MCQ	5
10	3	1	4	quiz: MCQ	2
				UTS: MCQ	5
11	3	1	5	Assignment	2
				UTS: MCQ	5
12	3	1	5	Assignment	2
				UTS: MCQ	5
13	3	1	5	Assignment	2
				UTS: MCQ	5
14	3	1	5	Assignment	2
				UTS: MCQ	5
15	9	2	9	Presentation	8
UAS					
				TOTAL WEIGHT:	**100**

11 Closing Remark

With the management plan and implementation mechanism of the curriculum of the Bachelor of Pharmacy Study Program, Faculty of Health Sciences UIN Syarif Hidayatullah Jakarta which is based on the PPEPP cycle, it is hoped that this study program will be able to answer the challenges and needs of the pharmaceutical world and produce competent, innovative, and ethical graduates who have Islamic values. The implementation of this curriculum will not only improve the quality of education but also provide a more meaningful and relevant learning experience for students.

We hope that the implementation of this systematic and continuous curriculum will form graduates who are ready to compete in the world of work and contribute positively in the field of pharmacy. Continuous efforts in curriculum evaluation and improvement will ensure that the education provided is always at the forefront of science and technology development.

The commitment of all stakeholders, including lecturers, students, staff, and partners in the world of work is very important in realizing this educational goal. With cooperation and dedication, we can achieve the expected improvement in the quality of education, thereby providing significant benefits to the wider community and the world of health