ACADEMIC GUIDELINE
MASTER PROGRAM IN PHARMACY

FACULTY OF PHARMACY
2019

CHAPTER I HISTORY OF THE FACULTY, VISION, MISSION, OBJECTIVES AND GRADUATES COMPETENCIES

1.1 History

The Faculty of Pharmacy, previously having the status as the Department of Pharmacy, was established on February 19, 1959, as the fifth of the seven departments belonged to the Faculty of Exact and Natural Sciences (FIPPA), Universitas Padjadjaran. At that time, academic activities of the Department of Pharmacy took place at Jl. Ir. H. Juanda No. 4 Bandung and the Institute of Natural Sciences (LIPA) at Jl. Singaperbangsa No. 1 Bandung. In 1978, the location moved to Jl. Maulana Yusuf No. 12 Bandung, which was previously occupied by the Faculty of Dentistry. After the new campus of the Faculty of Mathematics and Natural Sciences (FMIPA) in Jatinangor-Sumedang was completed, the Department of Pharmacy, together with other departments at FMIPA, moved to the campus in Jatinangor on September 1986. On October 17, 2006, the Department of Pharmacy changed its status become the Faculty of Pharmacy.

Currently, the Faculty of Pharmacy has 5 study programs, namely the Bachelor of Pharmacy Study Program, the Pharmacist Professional Program, Master Program in Pharmacy, the Master Program in Clinical Pharmacy, and the Doctoral Program in Pharmacy.

The Bachelor of Pharmacy Study Program (known as Program Studi Sarjana Farmasi (PSSF) was started in 1959. This study program has obtained an A accreditation from the Independent Accreditation Institution for Higher Education for Healthcare (LAM-PTKes) and its qualifications have been recognized by the Public Service Bureau (known as Jawatan Pengkhidmatan Awam (JPA) of Malaysia. Since 2006, PSSF has been accepting students from Malaysia.

The Pharmacist Professional Study Program was started in 1959 and has has obtained an A accreditation from the Independent Accreditation Institution for Higher Education for Healthcare (LAM-PTKes).

The Master program in Pharmacy was started since January 10, 2011 after obtaining the permission from the Ministry of National Education. This study program began accepting new students in the semester period of August - February in Academic Year 2011/2012 and obtained an A accreditation from LAM-PTKes in December 2017.

The Master Program in Clinical Pharmacy was started in the semester period of August - February in Academic Year 2016/2017 and obtained an A accreditation from LAM-PTKes in November 2017.

The Doctoral Program in Pharmacy was started in the semester period of August - February in Academic Year 2016/2017 and obtained a B accreditation from LAM-PTKes in December 2017.

1.2 Vision and Mission

1.2.1 Vision and Mission of the Faculty of Pharmacy

The vision of the Faculty of Pharmacy is to become the faculty of excellence in the implementation of research-based pharmaceutical education which is internationally competitive by 2024.

The mission of the Faculty of Pharmacy is:

1. Organizing research-based pharmaceutical education which is able to meet the demands of the community and has international competitiveness.
2. Organizing professional and accountable management of pharmacy higher education to improve public image.
3. Carrying out pharmaceutical research with local excellence which oriented towards scientific publications, patents and commercial products.
4. Organizing community service by utilizing the results of research in the pharmaceutical field.
5. Organizing cooperation in the pharmaceutical sector with the pentahelix concept.

1.2.2 Vision and Mission Master Program in Pharmacy

The vision of the Master Program in Pharmacy is to become an Excellent Master Program in Pharmacy in Research and International Competitive by 2024.

The mission of the Master Program in Pharmacy of the Faculty of Pharmacy is:

1. Organizing research-based master of pharmacy education which is relevant to the development of science and technology and meets the demands of the community.
2. Organizing the management of the Master of Pharmacy Study Program which are professional, accountable and regionally competitive.
3. Carrying out research which oriented towards scientific publications, innovative products and superior policies in the pharmaceutical field.
4. Carrying out services / community services by utilizing the results of research in the pharmaceutical field.
5. Organizing cooperation in the pharmaceutical sector through the pentahelix concept.

1.3 Purpose

1.3.1 Objectives of the Faculty of Pharmacy

The objectives of the Faculty of Pharmacy are:

1. Creating pharmacy higher education graduates who are able to meet the demands of the community and have international competitiveness.
2. Realizing a professional and accountable education management to improve the public image.
3. Producing scientific publications, patents, and commercial products from local excellence-based pharmaceutical reseach.
4. Increasing the use of research results in the pharmaceutical sector which are appropriate for the benefit of the community.
5. Realizing mutual benefit in the pharmaceutical sector through the concept of pentahelix.

1.3.2 Objectives of the Master Program in Pharmacy

The objectives of the Master Program in Pharmacy are:

1. Creating competent academicians in the field of pharmacy with RESPECT characteristics (Responsible, Excellent, Scientific Rigor, Professional, Encouraging, Creative and

Trust) and uphold the nobility of Sundanese culture and national culture in the diversity of world cultures.
2. Realizing the management of the Master of Pharmacy Study Program which is professional, accountable and has a, excellent reputation in the region.
3. Increasing the capacity of excellent research and innovation in the pharmaceutical field based on the Principal Scientific Pattern (Pola Ilmiah Pokok (PIP) of Unpad.
4. Realizing service / community service by utilizing research results in the pharmaceutical field.
5. Realizing mutual benefit in the pharmaceutical field through the pentahelix concept.

1.4 Competence of the Graduates

MAIN COMPETENCIES

The main competencies of the Master Program in Pharmacy (hereinafter abbreviated as PSMF) graduates from the Faculty of Pharmacy Unpad are in accordance with the vision and mission of the PSMF, learning outcomes (CP) from the Indonesian Pharmacy Higher Education Association (APTFI), Annex to Permenristekdikti No. 44 of 2015 concerning SNPT and input from pharmaceutical experts and advances in science and technology in the pharmaceutical field. The main competencies consist of:

A. Concentration/Field of Pharmaceutical Analysis and Medicinal Chemistry

- Able to carry out drug research and development in the context of drug discovery and product development
- Able to carry out quality assurance tests for drug dosage form
- Able to implement their knowledge in the teaching and learning process in higher education in the field of pharmaceutical analysis and medicinal chemistry
- Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews

B. Concentration/Field of Pharmaceutics and Pharmaceutical Technology

- Able to develop an understanding of knowledge about basic concepts in pharmaceutical science, especially in the manufacture of pharmaceutical products / industry
- Integrating advanced knowledge and concepts in pharmaceutical science, especially Pharmaceutics and pharmaceutical technology
- able to develop group dynamics and teamwork skills in the field of pharmaceutics and pharmaceutical technology
- Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews

C. Concentration/Field of Pharmaceutical Biology

- Able to carry out drug research and development in the context of drug discovery and product development
- Integrating advanced knowledge and concepts in pharmaceutical science, especially pharmacy biology
- able to develop group dynamics and teamwork skills in the field of pharmaceutical biology
- Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews

D. Concentration/Field of Pharmacology

- Able to carry out drug research and development in the context of drug discovery and product development
- Able to apply pharmacokinetic knowledge and processes and principles of pharmacodynamics to discuss therapeutic and toxic outcomes of medicinal compounds
- Able to implement their knowledge in analyzing, interpreting and criticizing scientific literature in the field of pharmacology
- Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews

SUPPORTING COMPETENCIES

The supporting competencies of Master Program in Pharmacy graduates from the Faculty of Pharmacy Unpad are in accordance with the general attitudes and skills of the masters **listed in the Annex of Permenristekdikti No. 44 of 2015 concerning SNPT**. Supporting competencies consist of:

Attitude:

1. Be devoted to God Almighty and able to show a religious attitude.
2. Upholding human values in carrying out pharmaceutical duties based on religion, morals and ethics.
3. Contributing in the improvement of the quality of life in society, nation, state, and advancement of civilization based on Pancasila.
4. Behaving as citizens who are proud and love the country, have nationalism and a sense of responsibility to the state and nation.
5. Appreciating the diversity of cultures, views, religions and beliefs, as well as the opinions or original findings of others, especially in the pharmaceutical field.
6. Work together and have social sensitivity and care for the community and the environment.
7. Obeying the law and discipline in social life.
8. Internalizing academic values, norms and ethics.
9. Demonstrate an attitude of responsibility for work in their field of expertise independently.
10. Internalizing the spirit of independence, struggle, and entrepreneurship, especially in the pharmaceutical field.

General Skills:

1. Able to make decisions in the context of problems solving in the development of pharmaceutical science, knowledge and technology based on analytical or experimental studies of information and data.
2. Able to increase learning capacity independently.
3. Able to manage, develop and maintain networks with colleagues and peers in scientific institutions or organizations.

CHAPTER II MANAGEMENT OF MASTER PROGRAM IN PHARMACY

2.1 Graduate Profile

Graduates of this study program will be absorbed by the market at the regional, national and international levels. Graduates will become lecturers, researchers at universities, research institutes, government and non-government institutions.

2.1.1 Regional Level

At the regional level, graduates will be absorbed by state and private universities in West Java, with the total 14 undergraduate pharmacy study programs. Additionally, the graduates also can be be absorbed by the government agencies in West Java such as the Public Health Office, The Indonesian Food and Drug Authority (BPOM), and the Government Research Institute. Furthermore, graduates can also be absorbed by non-government (private) agencies such as pharmaceutical industries, health foundation, Non-Governmental Organizations (NGOs), and others.

2.1.2 National Level

At the national level, graduates can be absorbed by 79 undergraduate study programs. Additionally, it can also be absorbed by national government agencies such as BPOM, and Research Institutions, pharmaceutical industries. Graduates can also be absorbed by non-government (private) agencies such as the pharmaceutical industry, health foundations, Non-Governmental Organizations (NGOs), and others.

2.1.3 International Level

Graduates of the Master program in pharmacy can be absorbed by neighbouring country such as Malaysia at several

public and private universities. As a reference, graduates of the Master Program in Pharmacy of Unpad have been absorbed by several universities in Malaysia, namely the University of Kuala Lumpur (UniKL) and Geometrica College.

2.2 Learning Outcomes

Learning outcomes of the Master Program in Pharmacy including aspects of general learning outcomes that divided into specific learning outcome.

A. Pharmaceutical Analysis and Medicinal Chemistry Concentration/Field

1. Able to carry out drug research and development in the context of drug discovery and product development.
   Divided into specific LO that were supported by courses:
   - Able to List and explain the psychochemical properties of solute and solvent that affect solubility, stability, and other bio pharmaceutical properties in drug dosage forms development.
   - Able to explain important factors for design, development and evaluation of different dosage form and drug delivery system
   - Able to Present the ability to interpret and analyze data
   - Able to Present the ability to interpret and analyze data
2. Able to carry out quality assurance tests for drug dosage form
   Divided into specific LO that were supported by courses:
   - Able to Develop, validate and apply different instrumental analytical technique in drug analysis on various drug dosage form
   - Able to Characterize and evaluate the psychochemical properties of pharmaceutical ingredients
3. Able to implement their knowledge in the teaching and learning process in higher education in the field of pharmaceutical analysis and medicinal chemistry
   Divided into specific LO that were supported by courses:

- Able to Present organized information orally, persuasively yet logical manner using documentations and supporting tool
- Able to Show contributions in individual or group project.

4. Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews

   Divided into specific LO that were supported by courses:
   - Able to Analyze and interpret data.
   - Able to Present organized information orally, persuasively yet logical manner using documentations and supporting tool

B. Pharmaceutics and Pharmaceutical Technology Concentration/Field

1. Able to develop an understanding of knowledge about basic concepts in pharmaceutical science, especially in the manufacture of pharmaceutical products / industry

   Divided into specific LO that were supported by courses:
   - Able to List and explain the psychochemical properties of solute and solvent that affect solubility, stability, and other bio-pharmaceutical properties in drug dosage forms development of drugs, herbal medicine & supplement, and cosmetics
   - Able to explain important factors for design, development and evaluation of different dosage form and drug delivery system
   - Able to Develop, validate and apply different instrumental analytical technique in drug analysis on various drug dosage form
   - Able to Identify and elaborate drug absorption, distribution, metabolism and excretion principles along with factors that influence the process
2. Integrating advanced knowledge and concepts in pharmaceutical science, especially Pharmaceutics and pharmaceutical technology

Divided into specific LO that were supported by courses:

- Able to Analyze and interpret data
- Able to explain critical factors in designing, production and evaluation various drug dosage form and other drug delivery system
- Able to Characterize and evaluate physicochemical properties of pharmaceutical ingredients

3. Able to develop group dynamics and teamwork skills in the field of pharmaceutics and pharmaceutical technology
   Divided into specific LO that were supported by courses:
   - Show contributions in individual or group project
   - Able to Summarize information and communicate its development obtained from group experience
4. Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews
   Divided into specific LO that were supported by courses:
   - Able to Collect, analyze and interpret scientific literature and disseminated the information orally or in writing
   - Able to Present organized information orally, persuasively yet logical manner using documentations and supporting tools
   - well organized and able to make technical and analytical document with relevant content

C. Pharmaceutical Biology Concentration/Field

1. Able to carry out drug research and development in the context of drug discovery and product development
   Divided into specific LO that were supported by courses:
   - Able to explain the psychochemical properties of solute and solvent that affect solubility, stability, and other bio-pharmaceutical properties in drug dosage forms development of herbal medicine

- Able to explain and apply mechanism of certain drug in molecular and cellular level
- Able to Present the ability to interpret and analyze data
- Apply different instrumental analytical techniques in herbal drug analysis for drug's pharmacological effect evaluation
- Able to design, produced and evaluation different herbal dosage form and its delivery system

2. Integrating advanced knowledge and concepts in pharmaceutical science, especially pharmacy biology
   Divided into specific LO that were supported by courses:
   - Able to Analyze and interpret data
   - Able to characterize and evaluate physicochemical properties of active compound from natural product
   - Able to Apply different separation techniques from natural product for isolation of marker and active compound
3. able to develop group dynamics and teamwork skills in the field of pharmaceutical biology
   Divided into specific LO that were supported by courses:
   - Able to Show contributions in individual or group project
   - Able to Summarize information and communicate its development obtained from group experience
4. Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews
   Divided into specific LO that were supported by courses:
   - Able to Collect, analyze and interpret scientific literature and disseminated the information orally or in writing
   - Able to Present organized information orally, persuasively yet logical manner using documentations and supporting tools

- well organized and able to make technical and analytical document with relevant content

D. Pharmacology Concentration/Field

1. Able to carry out drug research and development in the context of drug discovery and product development
   Divided into specific LO that were supported by courses:
   - List and explain the psychochemical properties of solute and solvent that affect solubility, stability, and other bio pharmaceutical properties in drug dosage forms development
   - Able to explain and apply mechanism of certain drug in molecular, cellular and organ system
   - Able to Analyze and interpret data.
   - Able to Apply different instrumental analytical techniques in drug analysis for drug's pharmacological effect evaluation
   - Able to asses and evaluate therapy outcome based on knowledge how drug enter to targeting receptor

2. Able to apply pharmacokinetic knowledge and processes and principles of pharmacodynamics to discuss therapeutic and toxic outcomes of medicinal compounds
   Divided into specific LO that were supported by courses:
   - Able to apply pharmacokinetic process related to absorption, distribution, metabolism and drug excretion
   - Able to evaluate impact of pharmacokinetic process of drug action
   - Able to use pharmacodynamic principle to discuss drug action mechanism and clinical outcome
3. Able to implement their knowledge in analyzing, interpreting and criticizing scientific literature in the field of pharmacology
   Divided into specific LO that were supported by courses:

- Able to Present organized information orally, persuasively yet logical manner using documentations and supporting tool
- Able to Show contributions both in individual or group project
- Able to do literature study independently using database and publication related to pharmacology to solved problem in pharmacology field

4. Communicate scientific information effectively both orally and in writing in seminars / conferences or scientific journals to inform and educate professional colleagues and peer reviews
   Divided into specific LO that were supported by courses:
   - Able to Analyze and interpret data.
   - Able to Analyze, interpret and criticize about study design, data interpretation and compatibility conclusion of the scientific literature
   - Able to Collect, analyze and interpret scientific literature and disseminated the information orally or in writting

2.3 Course Structure

The course structure applied in the Master Program in Pharmacy of the Faculty of Pharmacy Unpad follows the standards of University Curriculum according to Permenristekdikti No. 44 year 2015. This curriculum is changed periodically every 5 (five) years in a Workshop of Curriculum Amendment and is evaluated annually in a Workshop of Curriculum Evaluation. Education in the Master Program in Pharmacy consists of 4 semesters with a minimum workload load of 42 credits.

2.4.1 Course Structure of Pharmaceutics and Pharmaceutical Technology Concentration/Field

Semester 1

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.01001	Philosophy of Science	2
2	P20.01002	Research Methodology	2
3	P20.01003	Biostatistics	2
4	P20.01004	Physicochemical Analysis	2
5	P20.01005	Cell and Molecular Biology	3
		Courses (Compulsory in field/concentration)	
6		**Elective Courses 1**	
	P20.01006	Physical chemistry of solids and interfaces	2
7		**Elective Courses 2**	
	P20.01007	Drug Stability	2
8		**Elective Courses 3**	
	P20.01008	Biopharmaceutical	2
		Total credits	17

Semester 2

No	Course Code	Courses (General Compulsory)	Credits
1	P20.02001	Development of Pharmaceutical Dosage Forms	2
2	P20.02002	Pharmacokinetics	2
3	P20.02003	Drug Discovery and Development	3
4	P20.02004	Journal Reading and Review	2
		Elective Courses (Compulsory for students who take a thesis in Pharmaceutical Technology)	

No	Course Code	Courses (General Compulsory)	Credits
5	P20.02005	New Drug Delivery System	2
6	P20.02006	Unit Process	2
		Elective Courses (Compulsory for students who take a thesis in the study of Cosmetics)	
5	P20.02007	Decorative Cosmetics and Cosmeceuticals	2
6	P20.02008	Dermatology and Skin Care Products	3
		Elective Courses in Concentration 2 credits	
7a)	P20.02009	Formulations and Technology for Natural Product Preparations	2
7b)	P20.02010	Development and Characteristics of Raw Materials and Pharmaceutical Excipients	2
7c)	P20.02011	Pharmacogenomics	2
7d)	P20.02012	Pharmaceutical Engineering	2
7e)	P20.02013	Development of cosmetic preparations	2
Total credits			15-16

Semester 3

No	Course Code	Courses (General Compulsory)	Credits
1	P20.03001	Seminar of Research Proposal	2
2	P20.03002	Progress Report 1	1
Total credits 3			3

Semester 4

No	Course CODE	Courses (General Compulsory)	Credits
1	P20.04001	Progress Report 2	1
2	P20.04002	Seminar of Research Result	2
3	P20.04003	Magister Comprehensive Defense	3
4	P20.04004	Scientific paper	1
Total credits			7

2.4.2 Course Structure of Pharmacology Concentration/Field

Semester 1

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.01001	Philosophy of Science	2
2	P20.01002	Research Methodology	2
3	P20.01003	Biostatistics	2
4	P20.01004	Physicochemical Analysis	2
5	P20.01005	Cell and Molecular Biology	3

No.	Course Code	Compulsory Courses in Field/Concentration	
6	**Elective 1**		
	P20.01021	Pharmacodynamics	2
7	**Elective 2**		
	P20.01022	Chemotherapeutics	2
8	**Elective 3**		
	P20.01023	Pharmacotherapy	2
Total credits			**17**

Semester 2

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.02001	Development of Pharmaceutical Preparations	2
2	P20.02002	Pharmacokinetics	2
3	P20.02003	Drug Discovery and Development	3
4	P20.02004	Journal Reading and Review	2
Elective Courses in Field/Concentration (7 credits)			
6	**Elective 4**		
	P20.02031	Molecular Immunology	2
	P20.02034	Molecular Pharmacology	3
7	**Elective 5**		
	P20.02032	Pharmacology-Toxicology Methodology	2
	Elective 6		
8	P20.02033	Drug Interactions	2
Total credits			15-16

Semester 3

No.	Course CODE	Courses (General Compulsory)	Credits
1	P20.03001	Seminar of Research Proposal	2
2	P20.03002	Progress Report 1	1
Total credits			**3**

Semester 4

No.	Course CODE	Courses (General Compulsory)	Credits
1	P20.04001	Progress Report 2	1
2	P20.04002	Seminar of Research Result	2
3	P20.04003	Comprehensive Session	3
4	P20.04004	Scientific paper	1
Total credits			**7**

2.4.3 Course Structure of Pharmaceutical Analysis and Medicinal Chemistry Concentration/Field

Semester 1

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.01001	Philosophy of Science	2
2	P20.01002	Research Methodology	2
3	P20.01003	Biostatistics	2
4	P20.01004	Physicochemical Analysis	2
5	P20.01005	Cell and Molecular Biology	3
Elective courses (minimum 6 Credits)			
1	P20.01012	Drug and Food Analysis	2
2	P20.01013	Analysis Method Development	2
3	P20.01014	Separation and Purification Methods	2
4	P20.01015	Radiopharmaceuticals	2

No.	Course Code	Courses (General Compulsory)	Credits
5	P20.01016	Development of Radiopharmaceutical Preparations	2
6	P20.01017	Nuclear Medicine Applications	2
7	P20.01018	Analysis of Toxic Compounds	2
8	P20.01019	Validation and Regulatory Issues in Industry	2
9	P20.01020	Computational Chemistry and Molecular Modeling	2
Total credits			17

Semester 2

No	Course Code	Courses	Credits
1	P20.02001	Development of Pharmaceutical and Cosmetics Dosage Forms	2
2	P20.02002	Pharmacokinetics	2
3	P20.02003	Drug Discovery and Development	3
4	P20.02004	Journal Reading and Review	2
Elective courses (minimum 6 credits)			
1	P20.02023	Cosmetics and Household Health Supplies Analysis	2
2	P20.02024	Biomedical Analysis	2
3	P20.02025	Drug Stability	3
4	P20.02026	Drug Synthesis & Therapeutic Evaluation	2
5	P20.02027	Pharmaceutical Engineering	2
6	P20.02028	Molecular Based Analysis	3
7	P20.02029	Therapeutic and Diagnostic Agents	2

8	P20.02030	Instrumentation and In Vitro Testing in Radiopharmaceuticals	2
Total credits			16

Semester 3

No	Course Code	Courses	Credits
1	P20.03001	Seminar of Research Proposal	2
2	P20.03002	Progress report 1	1
Total credits			3

Semester 4

No	Course Cosw	Courses	Credits
1	P20.04001	Progress Report 2	1
2	P20.04002	Seminar of Research Result	2
3	P20.04003	Comprehensive Session	3
4	P20.04004	Scientific work	1
Total credits			7

2.4.4 Course Structure of Pharmaceutical Biology Concentration/Field

Semester 1

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.01001	Philosophy of Science	2
2	P20.01002	Research Methodology	2

3	P20.01003	Biostatistics	2
4	P20.01004	Physicochemical Analysis	2
5	P20.01005	Cell and Molecular Biology	3
Elective Courses (Compulsory in Field/Concentration)			
6	P20.01009	Pharmacogenomics and Pharmacogenetics	2
7	P20.01010	Standardization of Natural Medicine	2
8	P20.01011	Phytotherapy	2
Total credits			**17**

Semester 2

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.02001	Development of Pharmaceutical and Cosmetics Dosage Forms	2
2	P20.02002	Pharmacokinetics	2
3	P20.02003	Drug Discovery and Development	3
4	P20.02004	Journal Reading and Review	2
Elective Courses (minimum 6 Credits)			
12	P20.02014	Ethnopharmacy	2
3	P20.02015	Aromatherapy and Hydrotherapy	2
4	P20.02016	Herbal Supplements	2
5	P20.02017	Plant Tissue Culture	2
6	P20.02018	Natural Product Compound Separation Methods	2
7	P20.02019	Microbial Pathogenicity	2
8	P20.02020	Applied Microbiology	2
9	P20.02021	DNA and Protein Recombinant Technology	3

10	P20.02022	Molecular Based Biomedical Analysis	2
Total credits			**15**

Semester 3

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.03001	Seminar of Research Proposal	2
2	P20.03002	Progress Report 1	1
Total credits			**3**

Semester 4

No.	Course Code	Courses (General Compulsory)	Credits
1	P20.04001	Progress Report 2	1
2	P20.04002	Seminar of Research Result	2
3	P20.04003	Comprehensive Session	3
4	P20.04004	Scientific work	1
Total credits			**7**

2.5 Learning Methods, Forms and Programs of Learning

2.5.1 Pharmaceutics and Pharmaceutical Technology Concentration/Field

Course Code	Course Name	Study Program	Forms of Learning	Learning methods	Lecturer
P20.01001	Philosophy of Science	A course which covering the following subjects: the essence of the philosophy of science: definition, scope, and objectives; The concept of the philosophy of science; History of philosophy and development of science.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Moelyono MW., M.Sc., Apt Prof Dr Ahmad Muhtadi., Apt
P20.01002	Research methodology	discusses various aspects related to the research process which includes problem formulation, literature review, hypothesis formulation, research design preparation, data collection, data processing and analysis, interpretation of analysis results, and conclusions. In addition, this course discusses how to write research proposals, research reports, and scientific papers for publication in scientific journals.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Anas Subarnas, M.Sc., Apt Muchtaridi, Ph.D., M.Si, Apt
P20.01003	Biostatistics	Discusses the use of statistical methods in the design, analysis, interpretation, and presentation of biological experiments and their	Lecture, tutorials	Collaborative learning, project-based learning,	Dr. Hadyana Sukandar, M.Sc

		observations. It also discusses descriptive statistics, elements in experimental design, probability, hypothesis testing and statistical interference, analysis of variance, correlation, regression techniques, and non-parametric statistical methods. During the lecture, the application of statistical techniques in a biological context will be given using laboratory data and field data.		problem-based learning	Neily Zakiyah Ph.D
P20.01004	Physicochemical Analysis	learn about the methods of drug analysis methods for the purpose of qualitative and quantitative analysis consisting of: medicinal substances (natural and synthetic), drugs in pharmaceutical preparations, and their degradation products, and food safety. The analytical methods discussed include simultaneous UV-Vis spectrophotometry, derivative UV Vis spectrophotometry, atomic absorption spectrophotometer, infrared spectrophotometry, fluorometry, mass spectroscopy, NMR, chromatography techniques (gas chromatography and HPLC), electrophoresis.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah., M.Si., Apt Mutakin, Ph.D., M.Si., Apt
P20.01005	Cell and Molecular Biology	Learn about cell physiology and molecular analysis methods of cell function. Students will study the material How cells read the genome: from DNA to protein, genetic switch, cell	Lecture, tutorials	Collaborative learning, project-based learning,	Dr. Med. Sc. Melisa Intan B., Apt

		membrane, membrane transport, cell communication mechanisms, Cell signaling, Cell signaling: G protein-coupled receptor (GPCR), Cell signaling: Receptor Tyrosine Kinase, Cell signaling: Guanylyl cyclase receptor, Cell signaling: gated ion channel and adhesion receptor, Cell signaling: Nuclear receptor, cell cycle, and cell signaling and cancer.		problem-based learning	Dr. Tiana Milanda, M.Si., Apt
P20.01006	Physical chemistry of solids and surfaces	Study the principles of solutions, thermodynamics, surface tension, melting point, adsorption, viscosity, reaction kinetics, buffer and isotonic solutions, equilibrium, colloids, distribution constants and chromatography.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Med. Sc. Melisa Intan B., Apt Dr. Tiana Milanda, M.Si., Apt
P20.01007	Drug Stability	discusses the introduction that includes the definition of stability, expiration date, shelf life, global stability practices, prediction of drug storage time, development of drug stability analysis methods, validation and transfer methods, non-chromatographic methods for stability testing.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. rer. nat. Anis Yohana Ch, Apt Muchtaridi, Ph.D., M.Si, Apt
P20.01008	Biopharmaceutical	studied about the role of biopharmacetics in drug development, molecular and physico-chemical properties that affect drug absorption, dissolution testing, drug absorption principles,	Lecture, tutorials	Collaborative learning, project-based learning,	Taofik Rusdiana , Ph.D., Apt

		evaluation of P-glycoprotein permeability and interactions, instestin transporters in drug absorption, absorption-enhancing excipients, bioavailability and bio-equivalence, BCS (Biopharmaceutical Classification System) System Approach to Dissolution, IVIVC.		problem-based learning	Nasrul Wathoni Ph.D., Apt
P20.02001	Development of Pharmaceutical Dosage Forms	learn about early stage development (product design), preformulation as a product design aid, biopharmacetic aspects in formulation development, product optimization, parenteral dosage form, inhalation dosage form, oral solid dosage form, ophthalmic dosage form, aqueous nasal dosage form, topical and Transdermal Delivery.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Taofik Rusdiana M.Si., Apt*. Dr. Dolih Gozali, M.Si
P20.02002	Pharmacokinetics	Introduction, One Compartment Intravenous Pharmacokinetics Model, Two Compartment IV Pharmacokinetics Model, One Compartment Oral Pharmacokinetics Model, Two Compartment Oral Pharmacokinetics Model, Infusion Pharmacokinetics, Intravenous Multiple Dose Pharmacokinetics, Non-Oral Multiple Dose Pharmacokinetics, Clearance Concept, Linear Pharmacokinetic studies and Data Interpretation, PK-PD Relationship.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dra. Sri Adi Sumiwi Dr. med. Taofik Rusdiana M.Si., Apt.

P20.02003	Drug Discovery and Development	Learn to describe and justify the important role of multi-disciplines in the Drug Discovery and Development process. Molecular identification and validation of target diseases, Search for lead compounds from natural ingredients, computer-aided drug design (discovery of lead compounds), Identification and optimization of target interactions and optimization of pharmacokinetics, toxicological and safety tests and *in vivo* and *in vitro* pre-formulations and formulations of pre-clinical and clinical trial and Registration and Commercialization.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof.Muchtaridi S.Si., Apt., M.Si.,PhD Prof. Dr. Moelyono Muktiwardojo MS., Apt.
P20.02004	Journal Reading and Review	Discusses journals related to research conducted by students and presents in accordance with their respective fields of knowledge	Lectures, seminars	Collaborative learning, project-based learning, problem-based learning	Taofik Rudiana Ph.D., Apt Dr.Aliya Nur Hasanah M.Si., Apt
P20.02005	New Drug Delivery System	On this topic, students will learn about multiparticulate systems, nano technology, microcapsule technology, polymeric drug delivery (matrix and reservoir systems), transdermal preparations, osmotic pump systems, implants and in situ gel delivery systems, protein drug delivery, pH sensitive drug delivery, Targeted drug delivery.	Lectures, presentations	Collaborative learning, project-based learning, problem-based learning	Dr Marline Abdassah Dr.rer nat Anis Yohana Ch

P20.02006	Process Unit	On this topic, students will learn about mixing / blending materials, granulation theory and technology, tablet theory (conventional and novel dosage form), technology and factors that influence tablet manufacturing, coating theory and technology, encapsulation theory, factors in production semisolid liquid preparations, Controlled release theory and technology for making preparations, liposome manufacturing technology, nanoparticle technology, case studies during the production process in the pharmaceutical industry, packaging and product storage techniques, theory of scale up application in production processes, validation of production processes.	Lectures, presentations	Collaborative learning, project-based learning, problem-based learning	Dr rer nat Anis Yohana Ch Dr Marline Abdassah Dr.Leiman Sutanto
P20.02007	Decorative Cosmetics and Cosmeceuticals	In this topic, students will learn about facial, hair and nail care, facial, hair and nail care demonstrations, facial, hair and nail care from natural ingredients, decorative cosmetic dosage form formulations (face, hair and nails), case studies of cosmetic preparations. , Cosmeceutical: categories and types of cosmeceuticals (as photoaging, hair growth anhancers, moisturizers, retinoids, depigmentation agents, antioxidants, anti-dandruff), regulatory aspects of cosmeceuticals, cosmeceutical from natural ingredients.	Lectures, presentations	Collaborative learning, project-based learning, problem-based learning	Dr rer nat Anis Yohana Ch Soraya Ratnawulan Mita M.Si

P20.02008	Dermatology and Skin Care Products	On this topic, students will learn about skin diseases and their management, skin clinical pathways, skin transport, skin absorption and permeation, formulation strategies to modulate permeation of the skin, enhancers, antiaging, antioxidants, sun protection, moisturizers.	Lectures, presentations	Collaborative learning, project-based learning, problem-based learning	Dr rer nat Anis Yohana Ch
P20.02009	Formulations and Technology for Natural Substances	Students will learn how to formulate, and technology related to the formulation of natural ingredients	Lectures, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Dr.rer nat Anis Yohana Ch Prof Dr Moeyono MW
P20.02010	Development and Characteristics of Raw Materials and Pharmaceutical Excipients	Students will learn how to develop a pharmaceutical raw material and excipient techniques and their characteristics	Lectures, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Dr Dolih Gozali MS Taofik Rusdiana Ph.D., Apt
P20.02011	Pharmacogenomics	learn about the human genetic diversity that can affect the body's tutorials to drug metabolism. Students will study materials for introducing pharmacogenomics and pharmacogenetics, genotyping methods, pharmacogenetics and race / ethnicity, pharmacogenetic adverse drug reactions, social potential, ethics, and legal issues from the development of pharmacogenetics, pharmacogenetics and oncology,	Lectures, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Dr Med Sc Melisa intan Barliana Taofik Rusdiana Ph.D., Apt

		pharmacogenetics and infectious diseases, polymorphisms in the treatment of cardiovascular disease and respiratory, pharmacogenomics and metabolic diseases, pharmacogenomics of human p-glycoproteins, pharmacogenomics of drug transporters, pharmacogenomics of drug metabolizing enzymes, pharmacogenomics of drug targeting enzymes, and case discussion: Pharmacogenomics contributions to drug therapy: Warfarin, Clopidogrel,: Irinotecan, Aspirin, and others.			
P20.02012	Pharmaceutical Engineering	On this topic, students will learn about fluid flow, flow type, reynold number, viscosity, filtration, filtration mechanisms, factors that affect filtration speed, types of centrifugation filters, heat transfer, application of heat transfer to industrial processes, conduction-Fourier Law, convection concept, mass transfer, drying, mechanism, drying machine classification (tray, vacuum, fluid bed dryer, spraydry), LOD, drying rate, powder, powder properties, powder flow, packing, mixing, mixing theory, solid-solid mixing; solid-liquid and liquid-liquid, particle size reduction, influencing factors, sieving in powder, milling, crystallization, size, type, crystal habit, nucleation, supersaturation theory, impurities, scale up	Lectures, presentations	Collaborative learning, project-based learning, problem-based learning	Dr rer nat Anis Yohana Ch Yoga Windu Wardhana M.Si

P20.02013	Development of cosmetic dosage forms	learn about early stage development (product design), preformulation as a product design aid, biopharmacetic aspects in formulation development, product optimization, parenteral dosage form, inhalation dosage form, oral solid dosage form, ophthalmic dosage form, aqueous nasal dosage form, topical and Transdermal Delivery.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Taofik Rusdiana M.Si., Apt Dr. Dolih Gozali, M.Si
P20.03001	Seminar of Research Proposal	Discusses student thesis research proposals	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.03002	Progress Report 1	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of Department
P20.04001	Progress Report 2	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of Department
P20.04002	Seminar of Research Result	Discuss the results of conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team

P20.04003	Comprehensive Session	Discusses comprehensively related fields of science	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.04004	Scientific work	Discusses scientific journal outputs conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah.M.Si., Apt

2.5.2 Pharmacology Concentration/Field

Course Code	Course Name	Study Program	Forms of Learning	Learning methods	Lecturer
P20.01001	Philosophy of Science	A course which covering the following subjects: the essence of the philosophy of science: definition, scope, and objectives; The concept of the philosophy of science; History of philosophy and development of science	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Moelyono MW., M.Sc., Apt Prof Dr Ahmad Muhtadi., Apt
P20.01002	Research methodology	discusses various aspects related to the research process which includes problem formulation, literature review, hypothesis formulation, research design preparation, data collection, data processing and analysis, interpretation of analysis results, and conclusions. In addition, this course discusses how to write research proposals, research reports, and scientific papers for publication in scientific journals.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Anas Subarnas, M.Sc., Apt Muchtaridi, Ph.D., M.Si, Apt
P20.01003	Biostatistics	Discusses the use of statistical methods in the design, analysis, interpretation, and presentation	Lecture, tutorials	Collaborative learning,	Dr. Hadyana Sukandar, M.Sc

		of biological experiments and their observations. It also discusses descriptive statistics, elements in experimental design, probability, hypothesis testing and statistical interference, analysis of variance, correlation, regression techniques, and non-parametric statistical methods. During the lecture, the application of statistical techniques in a biological context will be given using laboratory data and field data.		project-based learning, problem-based learning	
P20.01004	Physicochemical Analysis	learn about the methods of drug analysis methods for the purpose of qualitative and quantitative analysis consisting of: medicinal substances (natural and synthetic), drugs in pharmaceutical preparations, and their degradation products, and food safety. The analytical methods discussed include simultaneous UV-Vis spectrophotometry, derivative UV Vis spectrophotometry, atomic absorption spectrophotometer, infrared spectrophotometry, fluorometry, mass spectroscopy, NMR, chromatography techniques (gas chromatography and HPLC), electrophoresis.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah., M.Si., Apt Mutakin, Ph.D., M.Si., Apt
P20.01005	Cell and Molecular Biology	Learn about cell physiology and molecular analysis methods of cell function. Students will study the material How cells read the genome: from DNA to protein, genetic switch, cell membrane, membrane transport, cell	Lecture, tutorials	Collaborative learning, project-based learning,	Dr. Med. Sc. Melisa Intan B., Apt

		communication mechanisms, Cell signaling, Cell signaling: G protein-coupled receptor (GPCR), Cell signaling: Receptor Tyrosine Kinase, Cell signaling: Guanylyl cyclase receptor, Cell signaling: gated ion channel and adhesion receptor, Cell signaling: Nuclear receptor, cell cycle, and cell signaling and cancer.		problem-based learning	Dr. Tiana Milanda, M.Si., Apt
P20.01021	Pharmacodynamics	Learn about the tutorials of drugs in the body and the principles of pharmacodynamics	Lectures, tutorials, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Anas Subarnas, M.Sc., Apt Dr. Sri Adi Sumiwi, M.S., Apt
P20.01022	Kemotherapeutics	Learn the Cell Cycle and explain different types of cancer drugs and the principles of chemotherapy; kinds of cytostatic drugs.	Lectures, tutorials, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Ajeng Diantini, M.S., Apt Dr. Eli Halimah., M.S., Apt
P20.01023	Pharmacotherapy	The Pharmacotherapy course explains the definition of pharmacotherapy which includes definition, pathophysiology, clinical symptoms, pharmacological and non-pharmacological diagnosis and treatment in cases of disorders of the nervous system, excretory system, cardiovascular system, digestive system, respiratory system, endocrine system, musculoskeletal system, autoimmune diseases,	Lectures, tutorials, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Ahmad Muhtadi, M.S., Apt Dr. Rini Hendriyani, M.Si., Apt

		infectious diseases; cancer; and drug selection for each disease; and evaluation of the use of multiple drugs in some cases.			
P20.02001	Development of Pharmaceutical Dosage Forms	learn about early stage development (product design), preformulation as a product design aid, biopharmacetic aspects in formulation development, product optimization, parenteral dosage form, inhalation dosage form, oral solid dosage form, ophthalmic dosage form, aqueous nasal dosage form, topical and Transdermal Delivery.	Lectures, tutorials, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Dr. Taofik Rusdiana M.Si., Apt*. Dr. Dolih Gozali, M.Si
P20.02002	Pharmacokinetics	Introduction, One Compartment Intravenous Pharmacokinetics Model, Two Compartment IV Pharmacokinetics Model, One Compartment Oral Pharmacokinetics Model, Two Compartment Oral Pharmacokinetics Model, Infusion Pharmacokinetics, Intravenous Multiple Dose Pharmacokinetics, Non-Oral Multiple Dose Pharmacokinetics, Clearance Concept, Linear Pharmacokinetic studies and Data Interpretation, PK-PD Relationship.	Lectures, tutorials, presentations	Collaborative learning, project-based learning, problem-based learning	Dra. Sri Adi Sumiwi Dr. med. Taofik Rusdiana M.Si., Apt.
P20.02003	Drug Discovery and Development	Learn to describe and justify the important role of multi-disciplines in the Drug Discovery and Development process. Molecular identification and validation of target diseases, Search for lead compounds from natural ingredients, computer-	Lecture, tutorials	Collaborative learning, project-based learning,	Muchtaridi S.Si., Apt., M.Si.,PhD Prof. Dr. Moelyono

		aided drug design (discovery of lead compounds), Identification and optimization of target interactions and optimization of pharmacokinetics, toxicological and safety tests and *in vivo* and *in vitro* pre-formulations and formulations of pre-clinical and clinical trial and Registration and Commercialization.		problem-based learning	Muktiwardojo MS., Apt.
P20.02004	Journal Reading and Review	Discusses journals related to research conducted by students and presents in accordance with their respective fields of knowledge	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof.Dr.Anas Subarnas Dr.Aliya Nur Hasanah M.Si., Apt
P20.02031	Molecular Immunology	Students studying Reviews: Innate immunity; Review: Adaptive Immunity; Immune system signal transduction; Immune system in gastrointestinal and other mucosal tissues; Immune system in skin and other specialized tissues; Immunological and autoimmune tolerance; Transplant immunology; Immune system against microbes; Immune system in hypersensitivity and immunodeficiency disorders; Immune System in Diabetes Mellitus; Immune System in Obesity; Immune system in other diseases.	Lectures, case studies	Collaborative learning, project-based learning, problem-based learning	Melisa Intan Barliana Dr. Med.Sc., Apt. Dr. Tiana Milanda M.Si., Apt

P20.02034	Molecular Pharmacology	Introduction to Drug Targets and Molecular Pharmacology, Molecular Cloning of Drug Targets, Drug-Receptor Interaction and Enzyme-Substrate Complex, G Protein-coupled Receptors as drug targets, Ion Channels as drug targets, Protein Transporters as drug targets, immunotherapeutics.	Lectures, interactive learning	Case study, Collaborative learning	Prof. Dr. Anas Subarnas M.Sc., Apt. Prof.Dr.Jutti Levita,M.Si., Apt.
P20.02032	Pharmacology-Toxicology Methods	students learn about research methods that meet the requirements and are carried out in the field of pharmacology - toxicology, both in silico, in vitro and in vivo. Pharmacological - toxicological methods include the definition and types of methods commonly used in the field of pharmacology and toxicology including requirements and code of ethics for the use of test animals, and specifically discusses methods for testing the activity of anti-hyperlipidemia, antidiabetic, antihypertensive, antioxidant, antidiuretic, antipyretic, anti-cancer, antimalarial, anti-inflammatory, hepatoprotective, antibacterial and antiviral as well as toxicity test methods.	Lectures, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Prof.Dr. Ahmad Muhtadi Dr. Rini Hendriani S.Si., Apt., M.Si.
P20.02033	Drug Interactions	Students learn about drug interactions including an overview of drug interactions, their mechanisms, drug interactions with other drugs, drugs with food-drinks, drugs with herbal medicines, drugs with diseases, and drugs with clinical examinations in the laboratory. Discussion on drug-drug interactions includes	Lectures, case studies, presentations	Collaborative learning, project-based learning, problem-based learning	Dr Eli Halimah M.Si., Apt Dr. Rini Hendriani M.Si

		drugs for gastrointestinal disorders, anticonvulsants, antihypertensives and cardiovascular drugs, anticoagulants, anti-hyperlipidemia, antidiabetic, bronchodilators, corticosteroids, antibiotics, antituberculosis, antiviral, and anticancer.			
P20.03001	Seminar of Research Proposal	Seminar of Research Proposal Discusses student thesis research proposals	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.03002	Progress Report 1	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of Department
P20.04001	Progress Report 2	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of Department
P20.04002	Seminar of Research Result	Discuss the results of research conducted by students	seminar	Collaborative learning, project-based learning,	Advisory and examiner team

				problem-based learning	
P20.04003	Comprehensive Session	Discusses comprehensively related fields of science	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.04004	Scientific work	Discusses scientific journal outputs conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah.M.Si., Apt

2.5.3 Pharmaceutical Analysis and Medicinal Chemistry Concentration/Field

Course Code	Course Name	Study Program	Forms of Learning	Learning methods	Lecturer
P20.01001	Philosophy of Science	A course which covering the following subjects: the essence of the philosophy of science: definition, scope, and objectives; The concept of the philosophy of science; History of philosophy and development of science	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Moelyono MW., M.Sc., Apt Prof Dr Ahmad Muhtadi., Apt
P20.01002	Research methodology	discusses various aspects related to the research process which includes problem formulation, literature review, hypothesis formulation, research design preparation, data collection, data processing and analysis, interpretation of analysis results, and conclusions. In addition, this course discusses how to write research proposals, research reports, and scientific papers for publication in scientific journals.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Anas Subarnas, M.Sc., Apt Muchtaridi, Ph.D., M.Si, Apt

P20.01003	Biostatistics	Discusses the use of statistical methods in the design, analysis, interpretation, and presentation of biological experiments and their observations. It also discusses descriptive statistics, elements in experimental design, probability, hypothesis testing and statistical interference, analysis of variance, correlation, regression techniques, and non-parametric statistical methods. During the lecture, the application of statistical techniques in a biological context will be given using laboratory data and field data.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Hadyana Sukandar, M.Sc
P20.01004	Physicochemical Analysis	learn about the methods of drug analysis methods for the purpose of qualitative and quantitative analysis consisting of: medicinal substances (natural and synthetic), drugs in pharmaceutical preparations, and their degradation products, and food safety. The analytical methods discussed include simultaneous UV-Vis spectrophotometry, derivative UV Vis spectrophotometry, atomic absorption spectrophotometer, infrared spectrophotometry, fluorometry, mass spectroscopy, NMR, chromatography techniques (gas chromatography and HPLC), electrophoresis.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah., M.Si., Apt Mutakin, Ph.D., M.Si., Apt

P20.01005	Cell and Molecular Biology	Learn about cell physiology and molecular analysis methods of cell function. Students will study the material How cells read the genome: from DNA to protein, genetic switch, cell membrane, membrane transport, cell communication mechanisms, Cell signaling, Cell signaling: G protein-coupled receptor (GPCR), Cell signaling: Receptor Tyrosine Kinase, Cell signaling: Guanylyl cyclase receptor, Cell signaling: gated ion channel and adhesion receptor, Cell signaling: Nuclear receptor, cell cycle, and cell signaling and cancer.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Med. Sc. Melisa Intan B., Apt Dr. Tiana Milanda, M.Si., Apt
P20.01012	Drug and Food Analysis	discusses drug analysis methods related to drug abuse, which consists of: narcotics, psychotropic substances, precursors (NPP), new psychoactive substances (NPS) and food analysis methods, especially on food safety (BTM, BBTM / non-food additives, chemical contaminants, physical contaminants and emerging chemical substances in food. It also discusses methods of analysis for complement products, namely nutritional and functional foods.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Ida Musfiroh., M.Si., Apt Prof. Resmi Mustarichie, M.Sc.
P20.01013	Analysis Method Development	learn about the introduction to the development of analytical methods, errors in measurement, source of errors, sampling techniques, validation parameters, method development: investigation	Lecture, tutorials	Collaborative learning, project-based learning,	Mutakin, Ph.D., M.Si., Apt

		of single and multivariate variables, validation statistics, application of analytical methods development projects: analytic problems, choosing analysis methods, characterizing performance analysis methods, method optimization and validation.		problem-based learning	Dr. Aliya Nur Hasanah, M.Si., Apt
P20.01014	Separation and Purification Method	learn about sample pretreatment, concepts in the separation process: equilibrium, reflux, mass transport, distribution theory: extraction, adsorption, and deposition / crystallization, chromatography: basic theory of chromatography, gas chromatography, preparative liquid chromatography, supercritical liquid chromatography.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Ida Musfiroh, M.Si., Apt Dr. Aliya Nur Hasanah, M.Si., Apt
P20.01015	Radiopharmaceuticals	studied radioactivity, radionuclide production, radiopharmaceutical preparations and dose calculation. Quality assurance of radiopharmaceutical preparations, radiation protection and regulation	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Muchtaridi Ph.D., Apt
P20.01016	Development of Radiopharmaceutical Preparations	study, describe and justify how to develop radiopharmaceutical preparations. The subject matter that will be given is Radiopharmaceuticals and Ideal Characters, Production of Radioisotopes which are Commonly Used in Radiopharmaceuticals, Design of Radiopharmaceuticals, Making radioisotope	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Resmi Mustarichie

		generators, radiopharmaceutical kits, GMP / CPOB aspects for Radiopharmaceuticals.			
P20.01017	Nuclear Medicine Applications	understand and explain the principles of nuclear medicine, the process of forming radionuclide compounds, preparation of radiopharmaceutical preparations, imaging techniques (ET, SPECT, PET, and MRI), radioisotope applications in the pharmaceutical and medical fields.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Muchtaridi Ph.D
P20.01018	Analysis of Toxic Compounds	studied the understanding of toxic compounds, drug abuse in sports, alcohol-drug-driving interactions, alternative specimens, post-mortem toxicology, bio-remedation, immunochemical-based toxicological analysis, chemical methods of handling hazardous compounds.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr Ida Musfiroh MSi., Apt Prof Dr ResmiMustarichie
P20.01019	Validation and Regulatory Issues in Industry	learn about the concept of analytical method validation, method validation for analysis by HPLC dissolution method validation, heavy metal limit test validation, bioanalytical method validation, qualification and calibration of analytical instruments, verification of UV-Vis spectrophotometer performance, verification of HPLC performance and the latest regulatory developments in the pharmaceutical industry (labeling, BABE, etc.)	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Muchtaridi Ph.D., Apt Mutakin Ph.D., Apt
P20.01020	Computational Chemistry and	learn about the concepts of molecular modeling, computational quantum mechanics, force fields,	Lecture, tutorials	Collaborative learning,	Muchtaridi Ph.D., Apt

	Molecular Modeling	ab initio methods, semi-empirical methods, density functional theory, molecular mechanics, molecular dynamics and MonteCarlo simulation, prediction of molecular geometry, calculation of chemical shear NMR.		project-based learning, problem-based learning	Sandra Megantara M.Farm., Apt
P20.02001	Development of Pharmaceutical Dosage Forms	learn about early stage development (product design), preformulation as a product design aid, biopharmacetic aspects in formulation development, product optimization, parenteral dosage form, inhalation dosage form, oral solid dosage form, ophthalmic dosage form, aqueous nasal dosage form, topical and Transdermal Delivery.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Taofik Rusdiana M.Si., Apt*. Dr. Dolih Gozali, M.Si
P20.02002	Pharmacokinetics	Introduction, One Compartment Intravenous Pharmacokinetics Model, Two Compartment IV Pharmacokinetics Model, One Compartment Oral Pharmacokinetics Model, Two Compartment Oral Pharmacokinetics Model, Infusion Pharmacokinetics, Intravenous Multiple Dose Pharmacokinetics, Non-Oral Multiple Dose Pharmacokinetics, Clearance Concept, Linear Pharmacokinetic studies and Data Interpretation, PK-PD Relationship.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dra. Sri Adi Sumiwi Dr. med. Taofik Rusdiana M.Si., Apt.
P20.02003	Drug Discovery and Development	Learn to describe and justify the important role of multi-disciplines in the Drug Discovery and Development process. Molecular identification	Lecture, tutorials	Collaborative learning, project-based	Muchtaridi S.Si., Apt., M.Si.,PhD

		and validation of target diseases, Search for lead compounds from natural ingredients, computer-aided drug design (discovery of lead compounds), Identification and optimization of target interactions and optimization of pharmacokinetics, toxicological and safety tests and *in vivo* and *in vitro* pre-formulations and formulations of pre-clinical and clinical trial and Registration and Commercialization.		learning, problem-based learning	Prof. Dr. Moelyono Muktiwardojo MS., Apt.
P20.02004	Journal Reading and Review	Discusses journals related to research conducted by students and presents in accordance with their respective fields of knowledge	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Muchtaridi Ph.D.,Apt Dr.Aliya Nur Hasanah M.Si., Apt
P20.02023	Cosmetics and Household Health Supplies Analysis	learn about the laws and regulations related to cosmetics and household health supplies, exposure and risk of chemicals in the use of cosmetics and household health supplies, safety aspects and rules of use, chemical analysis methods in cosmetic preparations and household health supplies	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr.Ida Musfiroh M.Si Dr.Aliya Nur Hasanah M.Si., Apt
P20.02024	Biomedical Analysis	learn about DNA-based molecular analysis methods, bioinformatics, protein determination, protein characterization, biotechnological product analysis methods, therapeutic protein stability testing	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr.Med Sc Melisa intan Barliana Rina Fajri Nuwarda M.Sc

P20.02025	Drug Stability	discusses the introduction that includes the definition of stability, expiration date, shelf life, global stability practices, prediction of drug storage time, development of drug stability analysis methods, validation and transfer methods, non-chromatographic methods for stability testing	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr.rer.nat Anis Yohana Ch Muchtaridi Ph.D., Apt
P20.02026	Drug Synthesis & Therapeutic Evaluation	Discusses the basic studies of drug synthesis and its therapeutic evaluation. The topics listed consist of the concepts of organic chemical synthesis and in vitro activity tests especially those related to physicochemical analysis	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Resmi Mustarichie Sandra megantara M.Farm
P20.02027	Pharmaceutical Engineering	On this topic, students will learn about fluid flow, flow type, reynold number, viscosity, filtration, filtration mechanisms, factors that affect filtration speed, types of centrifugation filters, heat transfer, application of heat transfer to industrial processes, conduction-Fourier Law, convection concept, mass transfer, drying, mechanism, drying machine classification (tray, vacuum, fluid bed dryer, spray dry), LOD, drying rate, powder, powder properties, powder flow, packing, mixing, mixing theory, solid-solid mixing; solid-liquid and liquid-liquid, particle size reduction, influencing factors, sieving in powder, milling, crystallization, size, type, crystal habit, nucleation, supersaturation theory, impurities, scale up	Lectures, presentations	Collaborative learning, project-based learning, problem-based learning	Dr rer nat Anis Yohana Ch Yoga Windu Wardhana M.Si

P20.02028	Molecular Based Analysis	learn about DNA-based molecular analysis methods, bioinformatics, protein determination, protein characterization, biotechnological product analysis methods, therapeutic protein stability testing	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr med Sc Melisa Intan Barliana Nyi Mekar Saptarini M.Sc
P20.02029	Therapeutic and Diagnostic Agents (Therapeutic and Diagnostic Compounds)	drug synthesis and its therapeutic evaluation. The topics listed consist of the concepts of organic chemical synthesis *and in vitro* activity tests especially those related to physicochemical analysis	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Resmi Mustarichie
P20.02030	Instrumentation and In Vitro Testing in Radiopharmaceuticals	explain the quality assurance system and how to develop a radiopharmaceutical product quality assurance system, radiopharmaceutical product testing in hospitals.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Muchtaridi Ph.D
P20.03001	Seminar of Research Proposal	Discusses student thesis research proposals	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.03002	Progress Report 1	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning,	Head of department

				problem-based learning	
P20.04001	Progress Report 2	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of department
P20.04002	Seminar of Research Result	Discuss the results of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.04003	Comprehensive Session	Discusses comprehensively related fields of science	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.04004	Scientific work	Discusses scientific journal outputs conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah.M.Si., Apt

2.5.4 Pharmaceutical Biology Concentration/Field

Course Code	Course Name	Study Program	Forms of Learning	Learning methods	Lecturer
P20.01001	Philosophy of Science	A course which covering the following subjects: the essence of the philosophy of science: definition, scope, and objectives; The concept of the philosophy of science; History of philosophy and development of science	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Moelyono MW., M.Sc., Apt Prof Dr Ahmad Muhtadi., Apt
P20.01002	Research methodology	discusses various aspects related to the research process which includes problem formulation, literature review, hypothesis formulation, research design preparation, data collection, data processing and analysis, interpretation of analysis results, and conclusions. In addition, this course discusses how to write research proposals, research reports, and scientific papers for publication in scientific journals.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Anas Subarnas, M.Sc., Apt Muchtaridi, Ph.D., M.Si, Apt
P20.01003	Biostatistics	Discusses the use of statistical methods in the design, analysis, interpretation, and presentation of biological experiments and	Lecture, tutorials	Collaborative learning, project-based	Dr. Hadyana Sukandar, M.Sc

		their observations. It also discusses descriptive statistics, elements in experimental design, probability, hypothesis testing and statistical interference, analysis of variance, correlation, regression techniques, and non-parametric statistical methods. During the lecture, the application of statistical techniques in a biological context will be given using laboratory data and field data		learning, problem-based learning	
P20.01004	Physicochemical Analysis	learn about the methods of drug analysis methods for the purpose of qualitative and quantitative analysis consisting of: medicinal substances (natural and synthetic), drugs in pharmaceutical preparations, and their degradation products, and food safety. The analytical methods discussed include simultaneous UV-Vis spectrophotometry, derivative UV Vis spectrophotometry, atomic absorption spectrophotometer, infrared spectrophotometry, fluorometry, mass spectroscopy, NMR, chromatography techniques (gas chromatography and HPLC), electrophoresis.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah., M.Si., Apt Mutakin, Ph.D., M.Si., Apt
P20.01005	Cell and Molecular Biology	Learn about cell physiology and molecular analysis methods of cell function. Students will study the material How cells read the genome: from DNA to protein, genetic switch, cell membrane, membrane transport, cell	Lecture, tutorials	Collaborative learning, project-based learning,	Dr. Med. Sc. Melisa Intan B., Apt

		communication mechanisms, Cell signaling, Cell signaling: G protein-coupled receptor (GPCR), Cell signaling: Receptor Tyrosine Kinase, Cell signaling: Guanylyl cyclase receptor, Cell signaling: gated ion channel and adhesion receptor, Cell signaling: Nuclear receptor, cell cycle, and cell signaling and cancer		problem-based learning	Dr. Tiana Milanda, M.Si., Apt
P20.01009	Pharmacogenomics and Pharmacogenetics	Learn about the human genetic diversity that can affect the body's tutorials to drug metabolism. Students will study materials for introducing pharmacogenomics and pharmacogenetics, genotyping methods, pharmacogenetics and race / ethnicity, pharmacogenetic adverse drug reactions, social potential, ethics, and legal issues from the development of pharmacogenetics, pharmacogenetics and oncology, pharmacogenetics and infectious diseases, polymorphisms in the treatment of cardiovascular disease and respiratory, pharmacogenomics and metabolic diseases, pharmacogenomics of human p-glycoproteins, pharmacogenomics of drug transporters, pharmacogenomics of drug metabolizing enzymes, pharmacogenomics of drug targeting enzymes, and case discussion: Pharmacogenomics	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Med. Sc. Melisa Intan B., Apt Taofik Rusdiana, M.Si., Ph.D., Apt

		contributions to drug therapy: Warfarin, Clopidogrel,: Irinotecan, Aspirin, and others.			
P20.01010	Standardization of Natural Medicine	Learn about the meaning, objectives, methodology and parameters of standardization of simplicia and extracts to ensure reproducibility of the quality of natural medicines	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Yoppi Iskandar, M.Si., Apt Ami Tjitraresmi, M.Si., Apt
P20.01011	Phytotherapy	Learn about the meaning, objectives, methodology and parameters of standardization of simplicia and extracts to ensure reproducibility of the quality of natural medicines	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof. Dr. Moelyono MW, MS., Apt. Dr. Yasmiwar Susilawati, M.Si., Apt
P20.02001	Development of Pharmaceutical Preparations	Learn about early stage development (product design), preformulation as a product design aid, biopharmacetic aspects in formulation development, product optimization, parenteral dosage form, inhalation dosage form, oral solid dosage form, ophthalmic dosage form, aqueous nasal dosage form, topical and Transdermal Delivery	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Taofik Rusdiana M.Si., Apt*. Dr. Dolih Gozali, M.Si
P20.02002	Pharmacokinetics	Introduction, One Compartment Intravenous Pharmacokinetics Model, Two Compartment IV Pharmacokinetics Model, One Compartment Oral Pharmacokinetics Model, Two Compartment Oral Pharmacokinetics Model, Infusion Pharmacokinetics,	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dra. Sri Adi Sumiwi Dr. med. Taofik Rusdiana M.Si., Apt.

		Intravenous Multiple Dose Pharmacokinetics, Non Oral Multiple Dose Pharmacokinetics, Clearance Concept, Linear Pharmacokinetic studies and Data Interpretation, PK-PD Relationship			
P20.02003	Drug Discovery and Development	Learn to describe and justify the important role of multi-disciplines in the Drug Discovery and Development process. Molecular identification and validation of target diseases Search for lead compounds from natural ingredients computer-aided drug design (discovery of lead compounds) Identification and optimization of target interactions and optimization of pharmacokinetics, toxicological and safety tests and In vivo and in vitro pre-formulations and pre-clinical formulations and Registration and Commercialization trial clinics	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Muchtaridi S.Si., Apt., M.Si.,PhD Prof. Dr. Moelyono Muktiwardojo MS., Apt.
P20.02004	Journal Reading and Review	Discusses journals related to research conducted by students and presents in accordance with their respective fields of knowledge	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr. Tiana Milanda Msi., Apt Dr.Aliya Nur Hasanah M.Si., Apt
P20.02014	Ethnopharmaceutical	Discusses the concepts of ethnopharmacy, health anthropology, ethnopharmacy of Baduy and Sundanese Kasepuhan	Lecture, tutorials	Collaborative learning, project-based	Prof Dr Moelyono MW

		indigenous peoples, ethnopharmaceuticals of the Nagas and hamlet villages, Javanese ethnic community ethnopharmacy, indigenous peoples of Mentawai, jungle people, talang mamak, ethnic Balinese indigenous peoples, ethnopharmaceuticals of sub-communities Kendayan Dayak ethnic, Dayak Tunjung sub-ethnic, Dayak Kenyah sub-ethnic, Toraja ethnic community ethnopharmaceutical, Bugis ethnicity, Minahasa ethnicity, Sasak ethnicity, Samawa ethnicity		learning, problem-based learning	Dr Yoppi Iskandar M.Si
P20.02015	Aromatherapy and Hydrotherapy	Discusses the history of aromatherapy, basic ingredients of aromatherapy, essential oils, qualitative and quantitative analysis, strength levels of essential oils, top notes, middle notes, base notes, aromatherapy as sedatives, hypnosis, arousal enhancers, hexagonal water structures, water crystals, alkaline water, effects dehydration, spa treatment, spa waters, aromatherapy spa, diseases treatment by spa	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Moelyono MW Dr Yasmiwar Susilawati
P20.02016	Herbal Supplements	Learn about the scope of herbal supplements, herbal supplements to improve nutritional quality, lifestyle quality, reduce disease risk, prevent premature aging, restore metabolic function, fitness stamina, adaptogens, immunity, and stimulant analeptics.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Prof Dr Moelyono MW Dr Yoppi Iskandar

P20.02017	Plant Tissue Culture	Learn about plant tissue culture	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr Yasmiwar Susilawati Dr Yoppi Iskandar
P20.02018	Natural Material Compound Separation Methods	Learn about the theory and use of separation methods, understanding, concepts, definitions and terms of separation, isolation of natural materials, solid liquid extraction, liquid-liquid extraction, counter-current distribution, super critical extraction, chromatographic theory, basic theory of gas chromatography, injection systems, columns , detection system, theoretical basis of terminology flat chromatography in flat chromatography, paper chromatography, thin layer chromatography, conventional column liquid chromatography, vacuum liquid chromatography, flash chromatography, medium pressure liquid chromatography, high performance liquid chromatography, molecular exclusion chromatography, ion exchange chromatography, Affinity chromatography, counter-current chromatography, preparative chromatography, electrophoresis, application and selection of separation methods in the	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr Yoppi Iskandar Prof Dr Moelyono MW

		isolation of natural substances, scale up isolation of natural materials, follow-up of natural materials isolation, literature review presentation			
P20.02019	Microbial Pathogenicity	Studying the pathogenicity strategies of bacteria and viruses, the body's defense tutorials against bacterial and viral attacks, the mechanism of action of antibacterial and viral drugs, the mechanisms of bacterial and viral resistance to drugs, the virus-oncogenesis mechanism and designing strategies to overcome drug resistance to bacteria and viruses.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr Tiana Milandar Dr Tina Rostinawati
P20.02020	Applied Microbiology	Learn about the applications of microbiology related to DNA sequencing, PCR etc.	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr Tiana Milandar Dr Tina Rostinawati
P20.02021	DNA and Protein Recombinant Technology	Learn about recombinant technology related to DNA and recombinant protein technology	Lecture, tutorials	Collaborative learning, project-based learning, problem-based learning	Dr Tiana Milandar Dr Tina Rostinawati
P20.02022	Molecular Based Biomedical Analysis	DNA-based molecular analysis methods, protein content determination, protein characterization, biotechnological product	Lecture, tutorials	Collaborative learning, project-based learning,	Dr Med Sc Melisa Intan Barliana

		analysis methods, therapeutic protein stability testing		problem-based learning	Rina Fajri N M.Sc
P20.03001	Seminar of Research Proposal	Discusses student thesis research proposals	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.03002	Progress Report 1	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of Department
P20.04001	Progress Report 2	Discusses the progress of research conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Head of Department
P20.04002	Seminar of Research Result	Discuss the results of conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Advisory and examiner team
P20.04003	Comprehensive Session	Discusses comprehensively related fields of science	seminar	Collaborative learning, project-based	Advisory and examiner team

				learning, problem-based learning	
P20.04004	Scientific work	Discusses scientific journal outputs conducted by students	seminar	Collaborative learning, project-based learning, problem-based learning	Dr. Aliya Nur Hasanah.M.Si., Apt

2.6 Lecturers

2.6.1 Home Base of Permanent Lecturer

No.	Permanent Lecturer Name[1]	NIDN[2]	Date of Birth	Academic Position	Academic Degree	Graduate of University[3]	Field of Expertise for Every Level of Education
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Resmi Mustarichie	0013125002	13/12/1950	Professor	Prof. Dr., MSc., Apt	S1 Unpad S2 Murdock Univ. Australia S3 Murdock Univ. Australia	Pharmacy Pharmaceutical Chemistry Pharmaceutical Chemistry
2.	Eli Halimah	0027126302	27/12/1963	Principal Lector	Dr. M.Si., Apt	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacy Chemistry
3.	Taofik Rusdiana	0030037301	30/03/1973	Principal Lector	Ph.D., Apt	S1 Unpad S2 ITB S3 Gunma University	Pharmacy

4.	Yasmiwar Susilawati	0018056903	16/05/1969	Principal Lector	Dr., M.Si., Apt	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacy Pharmacy
5.	Mutakin	0024057302	24/05/1973	Principal Lector	Ph.D., Apt	S1 Unpad S2 ITB S3 Gunma University	Pharmacy
6.	Aliya Nur Hasanah	0012027906	12/02/1979	Principal Lector	Dr., M.Si., Apt	S1 ITB S2 ITB S3 ITB	Pharmacy Chemistry Pharmacy
7.	Nyi Mekar Saptarini	0016107608	16/10/1976	Lector	Dr. M.Si., Apt	S1 ITB S2 ITB S3 ITB	Pharmacy Chemistry Pharmacy
8.	Nasrul Wathoni	0004058202	04/05/1982	Principal Lector	M.Si., apt., Ph.D	S1 Unpad S2 ITB S3 Kumamoto University	Pharmacy Pharmacy Pharmacy

2.6.2 Permanent Lecturers of PSMF with Home Base on other Study Program in Faculty of Pharmacy

No.	Permanent Lecturer Name[1]	NIDN[2]	Date of Birth	Academic Position	Academic Degree	Graduate of University[3]	Field of Expertise for Every Level of Education
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Tiana Milanda	0012126903	12/12/1969	Principal Lector	Dr., M.Si., Apt	S1 Unpad S2 ITB S2 ITB	Pharmaceutical Biology
2	Anas Subarnas	0019075202	19/07/1952	Professor	Prof., Dr., M.Sc., Apt.	S1 Unpad S2 Tohoku Univ. Jepang S3 Tohoku Univ. Jepang	Pharmacy Phytochemicals Pharmacology
3	Moelyono M.W	0011015003	11/01/1950	Professor	Prof. Dr., M.S., Apt.	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacognosy Pharmacognosy
4	Keri Lestari	0027046906	27/04/1969	Principal Lector	Dr., M.Si., Apt.	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacology Pharmacology

5	Ajeng Diantini	0012036402	12/03/1964	Professor	Dr., M.S., Apt	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacology Pharmacology
6	Ahmad Muhtadi	0003055502	03/05/1955	Professor	Prof. Dr., M.S., Apt.	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacology Pharmacology
7	Rizky Abdulah	0026017903	26/01/1979	Principal Lector	Ph.D., Apt.	S1 Unpad S2 dan S3 Gunma Univ Jepang	Pharmacy Pharmacology
8	Melisa Intan Barliana	0019097909	19/09/1979	Lector	Dr.Med.Sc., Apt.	S1 Unpad S2 dan S3 Gunma Univ Jepang	Pharmacy Pharmacology
9	Sri Adi Sumiwi	0010115704	10/10/1957	Principal Lector	Dr., MS., Apt	S1 Unpad S2 ITB S3 Unpad	Pharmacology Pharmacology Organic Chemistry
10	Sriwidodo	0030037401	30/03/1974	Principal Lector	M.Si., Apt	S1 Unpad S2 Unpad	Formulations Biochemistry
11	Eli Halimah	0027126302	27/12/1963	Principal Lector	Dr., MS., Apt	S1 Unpad S2 ITB S3 Unpad	Clinical Pharmacy Pharmacology Organic chemistry

12	Dolih Gozali	0019125904	19/12/1959	Principal Lector	MS., Apt	S1 Unpad S2 ITB S3 Unpad	Pharmacy Pharmacy Chemistry
13	Jutti Levita	0009046303	09/04/1963	Professor	Prof.,Dr., M.Si., Apt	S1 Unpad S2 ITB S3 ITB	Pharmacy Pharmacochemistry Pharmacochemistry
14	Anis Yohana Chaerunissa	0020127001	20/12/1970	Principal Lector	Dr.rer.nat, M.Si., Apt	S1 Unpad S2 ITB S3 Frije University	Pharmacy Pharmacy Pharmacy
15	Tina Rostinawati	0003017308	03/01/1973	Lector	Dr., M.Si, Apt.	S1 ITB S2 ITB S3 ITB	Pharmacy Pharmacy Pharmacy
16	Irma Melyani	0001057911	01/05/1979	Lector	P.hD., MT., Apt	S1 Unpad S2 ITB S3 Gunma University	Pharmacy Biomedical engineering Public health
17	Auliya A. Suwantika	0002048305	04/02/1983	*Asisten Ahli*	PhD., Apt	S1 Unpad S2 ITB S3 Groningen University	Pharmacy MBA Pharmacoeconomics

18	Ida Musfiroh	0027117503	27/11/1975	Principal Lector	Dr., M.Si., Apt	S1 Unpad S2 ITB S3 ITB	Pharmacy Pharmacochemistry Pharmacy

CHAPTER III ASSESSMENT AND REPORTING SYSTEM

The Master Program in Pharmacy at the Faculty of Pharmacy, Universitas Padjadjaran employs the Semester Credit System in the implementation of its education. Implementation of education on the basis of this semester credit system provides opportunities for:

1. Smart and active students to complete their studies in shorter time.
2. Students to take courses according to their abilities, talents and interests.
3. Implementation of the best possible student evaluation system.

3.1 General Definitions

Some of the general definitions used in the semester credit system are described below.

Semester is the smallest unit of time used to express the length/duration of the teaching and learning process of a program within an education level. The implementation of a complete level of education program from start to finish will be divided into semester activities, therefore at the beginning of each semester, students have to plan the study activities in the corresponding semester.

One semester is equivalent to 16 (sixteen) working weeks of study activities, ended by a final semester exam. One academic year consists of two regular semesters, namely the odd semester (on the period of August until February) and even semester (on the period of February until August).

Semester Credit System is a system for providing education using Semester Credit Units (*Satuan Kredit Semester*/SKS) to represent:

1. Student workload.
2. Lecturer workload.
3. Learning experience.
4. Cost of administering the program.

Semester Credit Units (*Satuan Kredit Semester* (SKS) is a measure of workloads towards the learning experience taken for one semester through scheduled activities per week.

Workload per Semester is the number of credits taken by a student in a semester, while the **Cumulative Workload** is the minimum number of credits which has to be taken by student for completing the learning process in a particular study program.

Cumulative Study Time is the maximum time which has to be taken by a student to complete his/her studies in a study program. For the Master of Pharmacy Study Program, a minimum of 42 credits and a maximum of 48 credits are scheduled for a four-semester study period and a maximum of 8 semesters. Academic leave is not counted as a student's study period. Students who have not been able to complete their studies within four years (8 semesters) without any justifiable reasons, are declared to have failed to take part in the Masters Program at the Faculty of Pharmacy Unpad;

One credit unit (SKS) for course activities is set to be equivalent to the workload of each week for one semester, which consists of the following three activities:

1. 1 hour (50 minutes) of scheduled lectures.
2. 1 hour (60 minutes) of structured activities outside the classroom.
3. 1 hour (60 minutes) of independent activities.

One credit unit for seminar activity is set to be equivalent with 100 minutes scheduled lecturer and 70 minutes independent studies. The minimum number of literature which is used as a reference and summarized for presentation in front of the forum is 3 (three) titles, depending on the weight of the literature.

One SKS for practicum activities in the laboratory is set to be equivalent to a study load of about 170 minutes of scheduled laboratory work, accompanied by structured activities outside the laboratory, but planned by the teaching staff concerned, including discussions and writing reports every week for one semester and independent activities, including reading reference books, deepening the material and completing assignments.

One credit unit for fieldwork, clinical work and similar activities is set to be equivalent to a workload of 170 minutes scheduled activities per week for one semester. One credit unit for thesis writing, research activities, and similar activities basically refers to fieldwork**.**

The learning process is carried out using the student-centered learning (SCL) method. The implementation of this method is adjusted with the policies of each study program, including problem-based learning, role playing, simulations, case studies, presentations, mini lectures and group discussions.

3.2 Students Registration

At the beginning of each semester students are required to make two types of registration, namely administrative registration and academic registration.

3.2.1 Administrative Registration

1. Administrative registration is carried out to fulfill stipulated administrative requirements and to obtain a student card;
2. For new students, the following registration requirements apply:
   a. Succesfully pass any test assigned by the University
   b. Bring an exam/selection card.
   c. Show original bachelor diploma or equivalent and submit a certified copy.
   d. Fill out and submit the registration form.
   e. Pay the Education Administration Fee (tuition fee) for the corresponding semester.
1. For existing students, the following registration requirements apply: :
   a. Pay the tuition fee for the corresponding semester during the registration schedule.
   b. Show the valid student card.
4. Students who failed to carry out administrative registration (herregistration) are not allowed to carry out academic

registration (fill in the study plans) and are not entitled to academic services at the faculty and study programs.

3.2.2 Academic Registration

Academic registration is carried out in order to participate in academic activities. Academic registration rules are as follows:

1. Registration is carried out at the Sub Division of Education of the Faculty of Pharmacy by submitting payment proof of tuition fee or Tuition Fee Deferral Approval Letter;
2. Students are required to take a Study Plan Card and fill it out with the academic counselor (guardian lecturer).
3. After the study plan is signed by the student and academic counselor, a signed study plan is submitted Sub Division of Education during the designated schedule.
4. Students will not receive any academic services as long as they do not register in the current semester.

3.3 Cards and Lists

In carrying out academic administration, several cards and lists are provided, including:

3.3.1 Card of Study Plan (CSP/KRS)

1. Card of Study Plan, known as **KRS**, contains a list of courses which will be taken by students in the corresponding semester.
2. KRS is filled out by students together with lecturer as academic counselor and approved and signed by academic counselor.
3. **KRS** has to be picked at (or Sub Bagian Pedidikan, hereinafter abbreviated as **SBP)**, no later than three days before lectures start at the beginning of each semester.
4. **KRS** is submitted to the **SBP**.

3.3.2 Card of Change of Study Plan (CCSP/PKRS)

With the approval of the academic counsellor, students are allowed to change the KRS (replace, add, or subtract) up to 10

(ten) working days of lectures (2 weeks). After this limit, changes to the KRS are no longer allowed.

The revised KRS must be submitted back to SBP at the latest at the end of the 2nd week of lecture.

1.3.3 Attendance List of Students and Lecturers (DHMD)

1. Attendance List of Students and Lecturers, (or Daftar Mahasiswa dan Dosen, hereinafter abbreviated as DHMD), contains the name and student identification number (NPM) who are participating in the corresponding course;
2. DHMD is signed by students during teaching and learning activities, as well as by lecturers or assistants at the end of the activity;
3. DHMD is kept by SBP or lecturer who teaches courses.
4. DHMD which is kept by the lecturer has to be submitted to the SBP as part of the evaluation material for student attendance in the Final Grading.

3.3.4 List of Participants and Final Grade (DPNA)

1. DPNA contains a list of names and student's ID number (known as NPM) of all students who take a course in accordance with attendance list (DHMD);
2. DPNA is given by SBP to lecturers who teach the courses during the final exams at the end of semester and must be submitted back to the SBP no later than one week after the exams;
3. The original DPNA is kept in the SBP, the first copy is posted on the announcement board, and the second copy is kept by the lecturer who teaches the course.

3.3.5 Card of Study Progress (KKS)

1. Card of Study Progress, known as **KKS**, contains the final score of all courses which have been taken by student in the corresponding semester and includes the maximum credit load which can be taken in the next semester;
2. KKS is issued by the SBP Faculty of Pharmacy;

3. KKS is used as a consideration in filling the KRS for the next semester;
4. KKS is made in 4 copies, each copy is for students, SBP, academic counsellor (guardian lecturers), and study programs.

3.3.6 List of Student Achievements (DPM)

1. List of Student Achievements, known as DPM, contains the Grade Point Average (GPA) of students for each batch in one study program, the number of semesters and the study load that has been taken, as well as the name and code number of the guardian lecturer. This DPM was made by SBP Faculty of Pharmacy.
2. DPM is authorized and signed by Vice Dean.
3. DPM is announced to students at the end of each semester.

3.3.7 Card of Exam Participant (KPU)

Card of Exam Participant (KPU) is a card which is used as student identity when taking the Final Semester Examination, KPU is obtained by student if the student meets the academic administration prerequisites to take the Final Semester Examination. KPU is issued based on the needs of the Faculty of Pharmacy.

3.3.8 Card of Student Course (KSM)

Card of Student Course (KSM) is a card used as proof/contract for courses taken by student in each semester, it is issued by SBP Faculty of Pharmacy after academic guidance process. KSM is issued based on the needs of the Faculty of Pharmacy.

3.3.9 Card of Academic Achievement (KPA)

Card of Academic Achievement (KPA) is a card which contains the entire list of courses along with the gradde of courses which have taken by students during their studies, this card can also be referred to as temporary academic transcripts

or a collection of Card of Study Progress (KKS). KPA is issued based on the needs of the Faculty of Pharmacy.

3.4 Learning Study Activities

1. Students are allowed to take part in learning activities if students :
   a. Have a valid Student Identity Card (KTM) in the corresponding semester.
   b. Fill in the KRS for the corresponding semester and the KRS has been signed by the student, academic counsellor (guardian lecturer) and SBP.
   c. Registered in the DHMD of the corresponding semester.
2. When participating in learning activities, students are obliged to sign DHMD. DHMD has to be checked by the lecturer who teaches the course.

3.5 Requirements to Participate in Exam

Students are allowed to take the exam if the following requirements are met :

1. Registered as a student in the corresponding semester.
2. Fulfills all administrative requirements
3. Participating in at least 80% of the lecture activities in the corresponding semester and / or participating in all activities (100%) of laboratory practice, field work, clinical work, seminars, or similar activities.
4. To take a comprehensive exam (defence), following requirements have to be fulfilled:
   a. Pass all of the courses in the study program (meet the required cumulative workload).
   b. Write a thesis and passed a Seminar of Research Result
   c. Completed the administrative requirements set by the University and the Faculty of Pharmacy.

3.6 Thesis

3.6.1 Thesis Writing

At the end of the Master Pharmacy Study Program, students are required to make a thesis in the form of research which is divided into 2 credits (0-2) of Research Proposal, 2 credits (0-2) of Research and Seminar of Research Results (including thesis preparation) and 3 credits (0-3) a Comprehensive Session.

1. Thesis is the final scientific work of a student pf Master's Study Program. It is written based on the results of research employing applicable scientific methods and principles.
2. A thesis is a student's original scientific work which is indicated by a stamped statement regarding its authenticity.
3. Tte authenticity of the thesis will be proven by anti-plagiarism software.
4. The thesis has the same position as other courses, but has a different form in the learning process, as well as the method of assessment.
5. The weight of the thesis is set at 9 (nine) credits which are divided into Seminar of Research Proposal, progress reports 1, seminar of research results, progress reports 2 and comprehensive sessions.
6. Thesis writing as a final project at Postgraduate level in Unpad is carried out based on these guidelines.
7. The structure and style of thesis writing, such as outline, citation writing, notes (footnote or running note), bibliography are following thesis writing guidelines applicable at the Faculty of Pharmacy Unpad.

3.6.2 Seminar of Research Proposal (SUP)

Students can take the Seminar of Research Proposal course, if:

1. Have a valid Student Identity Card (KTM) for the corresponding semester.
2. Have a KRS that includes a Seminar of Research Proposal as one of the courses.
3. Register to SBP by including the research interest.

SUP is a student research plan for the preparation of a thesis.

1. SUP can be carried out in the first semester provided that the the student has passed research methodology course and it is carried out no later than the end of semester III (three), if not or has not been implemented, the student is considered resigned from the program.
2. The Discussing Team of SUP consists of 2 (two) Advisors, 3 (three) Examiners, and is led by 1 (one) Chairman of SUP.
3. Students take SUP at predetermined times, and the Research Proposal (UP) manuscript must be bound in blue soft cover, and submitted to the Chairman of SUP, the Advisory Team and the Examiners Team at least 1 (one) week prior the implementation of the SUP.
4. SUP is carried out in a panel and attended by at least 3 (three) discussants, consisting of 1 (one) or 2 (two) Advisory Team and 1 (one) or 2 (two) ExaminerTeam and plus 1 (one) Chairman of the SUP.
5. The Chairman of the SUP is the Head of the Masters Study Program or the Chief Advisor, which is determined based on the Decree of the Dean of the Faculty on behalf of the Rector.
6. Chairman of the SUP is not automatically as discussant, except in accordance with the student's field of science or as the Head of the Advisory Team;
7. SUP is conducted in an open forum and can be attended by students and lecturers.
8. Students who do not pass SUP, are given the opportunity to repeat SUP 1 (one) time, which is held no later than 3 (three) months after the first SUP. The study termination sanction will be given, if the student is declared not to have passed the SUP for the second time.
9. In SUP, discussants evaluate the contents of the research proposal, ask questions and evaluate the answers given by students, and provide suggestions for improvement of the research proposal.
10. Assessment on SUP is given in the form of a raw score in the range of 0-100.
11. In SUP, discussants evaluate the accountability of students for questions that are critical and clarify towards: the material /

substance of the Research Proposal with a weight of assessment

a. Significance of Research Background and / or Research Focus, and Problem Formulation, weight 15% (fifteen percent);
b. Relevance and up-to-date Literature Review, weight 25% (twenty five percent);
c. The accuracy of the formulation of Thought Framework and Research Proposition / Hypothesis, weight 10% (ten percent);
d. Suitability of Research Methods, weight 10% (ten percent);
e. Scientific writing skills, weight 20% (twenty percent);
f. Communication skills in oral examinations, weight 20% (twenty percent).
g. The weight of the 100% (one hundred percent) assessment above can be added to the weight of the assessment of 10% (ten percent)

12. At the end of the SUP, the discussant / reviewer gives the following assessment:
    a. students are declared to pass if they get an average score of ≥ 68;
    b. students are deemed not to pass if they get an average value <68.

Final Score	Grade in Letter	Grade in Number
80 ≤ NA ≤ 100	A	4
68 ≤ NA < 80	B	3
56 ≤ NA < 68	C	2
45 ≤ NA < 56	D	1
NA < 45	E	0

Conversion of Final Score into Grade Letter and Grade number using the following guidelines:

3.6.3 Seminar of Research Results

Students can take the Seminar of Research Results course if they have completed all the provisions in the Seminar of Research Proposal course and progress reports. Before being able to conduct research seminars, students must take a computer assisted test (CAT) according to their concentration in the corrresponding study program. CAT is held a maximum of 1 week before the implementation of the seminar of research results and is held a maximum of 3 times until students are able to achieve a minimum score of 58.

If the research cannot be completed in one semester, then:

1. Students are still allowed to finish it in the next semester, by re-listing the Research Results Seminar course on KRS (research topic and supervisor remain the same).
2. At the end of the corresponding semester, the subject is given the letter K, so it is not used for calculating GPA and GPA.

If the thesis cannot be completed in two consecutive semesters, then:

1. The Research Results Seminar course is assigned a quality letter E, except in certain cases which can be accounted for academically.
2. Students are required to take the research again with a different title (supervisor can be changed or the same).

Examinations are carried out towards the research result in Seminar of Research Results. The requirements for conducting research seminar are:

1. Submit a letter of recommendation from the supervisor
2. Submit the proof of revisions to the research proposal draft in accordance with the suggestions from the examiners and supervisors signed by the study program
3. Submit the proof of scientific publication
4. Submit a thesis statement with a stamp of Rp. 6000
5. Submit the Card of Academic achievement which is signed by the Head of Study Program
6. Submit the letter Free from Library from Library of Postgraduate, Cisral Unpad, and Faculty of Pharmacy

7. Submit the letter Free from Laboratory
8. Submit the latest and valid TOEFL certificate
9. Complete administrative requirements set by the faculty and university.

The Seminar of Research Result is held at least three months after the Seminar of Research Proposal.

3.6.4 Research and Writing Scientific Articles

1. Research is carried out after students pass SUP and have made revision to the research proposal and approved by the Advisory Team.
2. During the lecture period and after SUP, students write scientific papers according to the research theme in SUP as one of the requirements for graduation. Scientific works can be in the form of: Scientific articles which are part of the thesis, as the main author (first author) and have to include the names of the supervisors as co-authors and Unpad as affiliate institution, in at least national journals accredited Sinta 3 according to the provisions in Unpad;
3. With the guidance and direction of the Advisory Team (Chairperson and Supervising Member), students write 1 (one) scientific article with a topic which is in accordance with thesis research (according to the research theme which has been tested in SUP) to be published at least in a national journal accredited Sinta 3.
4. Students who can send their research results to at least Q4 Scopus international journals, obtain the LoA (Letter of Acceptance) and submit proof of review, are no longer need to conduct research results seminars, but still have to conduct comprehensive hearings.
5. Students have to submit scientific articles to at least Sinta 3 accredited national journals with the approval of their supervisors who will act as co-authors, including the Unpad institution.
6. Especially for students whose 1 (one) scientific article is accepted or published in a reputable international journal of

at least Q3 Scopus, which is proved by a letter of acceptance from the reputable international journal publisher (written during their Masters Education and in accordance with the research theme which has been tested in SUP), in accordance with the applicable provisions in the Unpad environment, the respective student is given an assessment score with the grade letter A for the seminar of research result while still being required to write a thesis that is adjusted to his scientific article.

7. Relationship between Thesis and Scientific Articles
    a. Students write a thesis manuscript in accordance with research proposal and based on research results published as scientific articles;
    b. One of the research sub-topics, produces 1 (one) scientific article with a certain “sub-topic / issue” that is in accordance with the research theme / topic during SUP;
        1. Thesis research topic (X), consists of (can be divided into) several sub-topics X1, and Xn;
        2. Research sub-topics X1, producing scientific articles in reputable international journals / accredited national journals / with “topics / issues” X1;
        3. Xn research sub-topics, producing scientific articles in reputable international journals / accredited national journals / "topics / issues" Xn;
        4. The synthesis of the three researches can produce one scientific article in a reputable international journal / accredited national journal;
        5. The ideas of written scientific articles (X1, Xn) are derivatives of the main ideas contained in X.

3.6.5 Comprehensive Session

1. General
    a. The student of Master Program can take the examination in the form of a comprehensive trial (defence) according

to their respective concentrations if they meet the following requirements:

1) Has passed the courses with a GPA of at least 3.00;
2) Has implemented SUP and is declared passed; and the thesis text has been examined in a research results seminar (SHP)
3) The thesis paper has been approved by the Advisory Team;
4) Submit a proof of published scientific articles (written while attending master study program)

b. before the comprehensive session, students have passed the Seminar of Research Results;
c. Before the session, the Advisory Team evaluates the material / substance of the manuscript submitted through the Seminar of Research Results (SHP) which is managed by the Study Program;
d. The defence material is a comprehensive session according to the student's research topic and the concentration of each student
e. The head of the session is the Head of the Masters Study Program or the Chief Advisor;
f. The Discussion Team consists of 2 (two) Advisory Teams and 3 (three) Examiner Teams;
g. Students attend the trial at the appointed time, and the thesis manuscript must have been bound in a yellow soft cover, and submitted to the Chair of the Defencel, the Advisory Team and the Examiner Team at least 1 (one) week before the implementation of session;
h. The chairman of the session is not automatically a discussant, except in accordance with the student's field of science or as the Chief Advisor.

2. Seminar of Research Results (SHP)
   a. SHP is carried out in a panel and attended by at least 3 (three) discussants, consisting of 1 (one) or 2 (two) Advisory Team and 1 (one) or 2 (two) Examiner Team plus 1 (one) the Chairman of SHP;
   b. The Examiner Team at the stipulated SHP time must be the same as the Examiner Team at the SUP;

c. In the SHP, the discussion evaluates the content of the thesis manuscript by weighting the ratings:
   1) Significance of Research Background and / or Research Focus, and Problem Formulation, weight 10% (ten percent);
   2) Relevance and up-to-date of Literature Review, weight 20% (twenty percent);
   3) The accuracy of the formulation of the Thinking Framework and Research Proposition / Hypothesis, weight 10% (ten percent);
   4) Suitability of Research Methods, weight 10% (ten percent);
   5) Sharpness of analysis and integrity of thought, weight 20% (twenty percent);
   6) Stability and quality of conclusions, as well as suggestions submitted, weight 10% (ten percent);
   7) Scientific writing skills, weight 10% (ten percent);
   8) Communication skills in oral examinations, weight 10% (ten percent).

   The weighting of the 100% (one hundred percent) assessment above can be added to the weight of the assessment of 10% (ten percent) below, if students can show their contribution to the development of science, technology and development;
d. The final score on SHP is given in the form of a raw score in the range of 0-100;
e. At the end of the SHP, discussants gave the following assessments:
   1) students are declared to have passed if they get an average score of ≥ 68;
   2) students are deemed not to pass if they get an average value <68.
f. The scores of the discussants are added up by the percentage of the Advisory Team of 60% (sixty percent) and the Examiner Team 40% (forty percent) as Final Score, without first being converted into Grade Letter;
g. Conversion of Final Score into Grade Letter and Grade Number using the following guidelines:

Final score	Grade Letter	Grade Number

80 ≤ NA ≤ 100	A	4
68 ≤ NA < 80	B	3
≤ NA < 68	C	2
45 ≤ NA < 56	D	1
NA < 45	E	0

h. Students who do not pass the SHP, are given the opportunity to take 1 (one) repeat SHP within the agreed time period, taking into account the study time limit;

i. The graduation judicium is based on the final GPA, which is the combined average of Grade Number of courses with the Grade Number of comprehensive trial, as follows:

Quality Score	**Yudisium**
3,00 - 3,50	Satisfactory
3,51 - 3,75	Very satisfactory
3,76 – 4,00	Praise (with additional conditions)

j. The predicate of graduation "Praise", has other additional requirements, namely:
    1. Time of graduation from Master Program (Comprehensive session date date) takes into account the scheduled study period plus 1 (one) semester (0.5 years) or a maximum of 5 (five) semesters;
    2. Has had at least 1 (one) scientific article with an accepted status in a reputable international journal or in a national journal accredited Sinta 2;
    3. There are no courses with a C grade;
    4. Not repeating courses.

k. Students who meet the "Praise" judicium, but do not meet the additional requirements in

accordance with point j, then the graduation judicium is only determined as "Very Satisfactory".

l. Students who can submit their research results to at least Q4 international journals, obtain LoA (Letter of Acceptance) and submit proof of review are no longer need to conduct research seminars but still have to conduct a comprehensive session.

3.6.6 Predicate of Graduation

The graduation judicium is based on the final GPA, which is the combined average of Grade Number of courses with the Grade Number of comprehensive trial, as follows :

Quality Score	**Yudisium**
3,00 - 3,50	Satisfactory
3,51 - 3,75	Very satisfactory
3,76 – 4,00	Praise (with additional conditions)

The predicate of graduation "Praise", has other additional requirements, namely:

1. Time of graduation from Master Program (Comprehensive session date date) takes into account the scheduled study period plus 1 (one) semester (0.5 years) or a maximum of 5 (five) semesters;
2. Has had at least 1 (one) scientific article with an accepted status in a reputable international journal or in a national journal accredited Sinta 2;
3. There are no courses with a C grade;
4. Not repeating courses.
5. Students who meet the "Praise" judicium, but do not meet the additional requirements in accordance with point j, then the graduation judicium is only determined as "Very Satisfactory"

3.7 Evaluation of Learning Outcomes

The final grade of a course obtained by students is stated in two forms, namely the Grade Letter and the Grade Number according to the UNPAD assessment guidelines, which are divided into the following grade:

Grade Letter	Grade Number
A	4
B	3
C	2
D	1
E	0

A student is deemed to have obtained the letter T if:

1. Have not participated in the final evaluation of the semester;
2. After the evaluation in item (1) is fulfilled by the student within 2 weeks from the final examination of the subject, the letter T must be changed to grades A, B, C, D, or E;
3. If the evaluation in item (1) is not fulfilled within the time limit of 2 weeks, then the grade letter becomes E, or the lecturer who teaches the course can process it according to the weight of each assigned evaluation section, so as to produce another quality letter;
4. The letter T cannot be changed to the letter K, unless the student is unable to take the final exam inr the following semester on the basis of justifiable reasons (illness, accident, or an accident requiring long treatment).

A course can be stated with the letter K if:

1. Students resign from lectures after the deadline of amendment of KRS (2 weeks after the academic activity started) with justifiable reasons and proven by a letter from Dean.
2. Students cannot take the final semester exams.
3. Students cannot complete the final project in one semester.

4. Students do not participate in learning activities for a long time because of illness, or have an accident accompanied by a certificate from the authorities.
5. Subjects that have the letter K are not used for calculating GPA or cummulative GPA.
6. For students who get the letter K for the entire study load in the corresponding semester, this is counted towards the study time limit and is not considered a temporary study termination.
7. The K value can be changed into A, B, C, D, or E after attending the course again.

Assessment of students' understanding of material in all programs, both cognitive, psychomotor, and affective, uses PAP (Benchmark Assessment) with the following criteria:

Range	Grade's Letter	Grade's Number
NA ≥ 80	A	4
68 ≤ NA< 80	B	3
56 ≤ NA< 68	C	2
45 ≤ NA< 56	D	1
NA < 45	E	0

3.7.1 Achievement Index (IP)

1. Achievement index (IP) is a number that shows the achievement or progress of student learning in one semester.
2. IP is calculated at the end of each semester.
3. The calculation formula is as follows (round down if less than 0.05, round up if equal / more than 0.05).

$$IP = \frac{\text{Total (Grade Number x Credits)}}{\text{Number of credits}}$$

3.7.2 Grade Point Average (GPA) / Cummulative Achievement Index (IPK)

1. The Grade Point Average (GPA) is a number that shows a student's cumulative learning achievement or progress from the first semester to the last semester that has been taken.
2. GPA is calculated at the end of each semester.
3. The calculation formula is as follows (round down if less than 0.05, round up if equal / more than 0.05):

$$\text{GPA} = \frac{\text{Amount (Grade Number x Credits) of all semesters taken}}{\text{The number of credits of all semesters taken}}$$

4. GPA is used to determine the workload of the following semester.
5. The range of GPA and the maximum number of credits a student can take in the following semester (according to the Unpad assessment guidelines).

GPA Range	Maximum number of credits
3,00 – 4,00	24
2,50 – 2,99	21
2,00 – 2,49	18
1,50 – 1,99	15
< 1,50	< 12

6. IP and IPK (GPA) are used as criteria to give academic sanction and study evaluation at the end of the program.
7. Students are allowed to take a semester workload which is less than the minimum allowable amount, but are not allowed to take a semester workload that is greater than the maximum allowable amount.
8. If students improve the grade letter of E, D, or C, GPA is calculated using the higher grade, for example: grade letter D then it's is fixed to an E, grade letter D is used to calculate GPA.

9. The letters T and K are not used in calculating the IPK. The letter T must be changed to A, B, C, D, or E within two weeks after the letter T is announced.

3.7.3 The Revision of Grade Letter

The revision of grade letter can be carried out in the regular semester (odd semester and even semester).

1. Grade letter E must be corrected by taking the subject again in the next semester or at the first opportunity.
2. The grade letter used for the calculation of IP and IPK is the last quality letter.

3.7.4 Number of Grade Letters D

Students in the Pharmacy Masters Study Program are not allowed to have grade letter D. Termination of study can be executed if at the end of semester I (one) and semester II (two) student get a grade letter lower than C C.

3.8 Guidance and counseling

Guidance and Counseling aims to provide guidance and counseling assistance to students of Universitas Padjadjaran who have problems, both academic and non-academic in order to be able to overcome the problems they face, and to develop their abilities and self-understanding in an effort to complete their studies.

Guidance and Counseling service procedures are as follows:

1. Students can come to the faculty counselor lecturer on their own or at the advice of the guardian lecturer. The guardian lecturer will give a cover letter to the counselor lecturer.
2. Student services at the University TPBK are only permitted on the basis of the consideration of the Faculty Leader who will provide a cover letter, except in certain circumstances that are deemed emergency.
3. Services for students who are recommended to transfer study programs, the following procedures apply:
   a. Submit a letter of application from students / parents / guardians to get guidance and counseling services.

b. Include the academic transcript of the student concerned.
c. Submitting a cover letter for the application for "Psychological Test" on behalf of the student concerned from the Head of the Faculty (Dean / Vice Dean I) / University Leaders (Rector / WR I) to TPBK University
d. The findings and the results of the "Psychological Test" on behalf of the student concerned are from the University TPBK

To help students learn, the Faculty of Pharmacy assigns a guardian lecturer who will guide students during their study in the Pharmacy Masters Program. The number of students supervised by certain guardian lecturers is adjusted to the ability of the Faculty of Pharmacy with the following conditions:

1. Basically, each teacher can be a guardian lecturer who guides students for the entire program.
2. Guardian lecturers are required to keep in touch with students periodically to monitor the progress of their studies, at least at the beginning, middle and end of the semester; Guardian lecturers are required to have, fill in, and keep a Student Information File (BIM) book, both for the purposes of academic guidance and personal guidance.

In summary, the duties of guardian lecturers are:

1. Helping students prepare a study plan, either a full study program or a semester program.
2. Give consideration to the student's guidance in determining the study load and types of courses to be taken, according to the GPA obtained in the previous semester.
3. Monitor the progress of the student's studies he supervises.

At the beginning of the semester, the guardian lecturer holds a meeting with students to discuss the study plan of the entire program being taken. The things discussed are:

1. The estimated number of semesters a student will take to complete the entire program.
2. Direction of student study.

Things that need to be considered in determining the course taking, namely:

1. Courses that are a prerequisite for the next course.
2. Courses that are only presented in one semester (odd semester or even semester only) or presented each semester.

3. SKS weight for courses, with the understanding that the bigger the SKS weight, the heavier it will be.
4. Different forms of subjects (lectures, laboratory practices, seminars, clinical practicums, etc.) have different hours of learning activities.
5. The minimum requirement for attendance is 100% in laboratory lab work and 80% in lectures (20% absence must be accompanied by a justifiable reason).
6. Semester study load, because too much can cause a low GPA which can lower GPA. This will determine the semester study load that can be taken in the following semester.
7. Elective courses available in the study program.

After discussing the study plan for the whole program, it is followed by the semester I study plan. Basically for the first semester each student is given the same opportunity, namely 21 credits.

1. KRS filling in each semester is carried out by students with the approval of the guardian lecturer. The guardian lecturer gives considerations and suggestions for taking the semester's study load based on the end-of-semester GPA as a guide, in addition to improving the overall study plan of the program by signing and stating the agreement with the students;
2. The semester study load does not have to be the maximum number of credits allowed on the basis of the end of semester GPA, especially if the courses to be taken include research activities and thesis writing or clinical and field activities (1 credit = 4-5 hours), because of the number of hours of learning activities. will be greater than lecture activities (1 credit = 50 minutes face to face and 60 minutes unscheduled structured activities, 60 minutes for independent activities).
3. Guardian lecturers must pay attention to the number of quality letters D obtained by students so as not to exceed the applicable provisions at the end of the entire program (not to exceed 20% of the cumulative study load).
4. To some extent personal difficulties can be accommodated by guardian lecturers, but if they cannot be resolved, it is recommended to be referred to the counselor lecturer at the Faculty of Pharmacy..

5. In the event that the guardian lecturer is unable to carry out their duties for a long enough time, the Head of the Faculty of Pharmacy is obliged to appoint a replacement.

3.9 Temporary Discontinuation of Study

Students can temporarily stop their studies with the Dean's Permission by referring to the following conditions:

1. The maximum number of study interruptions is two semesters, either consecutively or separately.
2. The mechanism for applying for a study suspension permit
   a. Students submit a letter of application to the Head of the Study Program, which is known by the Lecturer Guardian / Academic Advisor by affixing a signature.
   b. Application letters are submitted no later than 2 (two) weeks after lecture activities.
   c. After considering the academic aspect (GPA and the amount of credit savings), the Head of the Study Program forwards the application to the Dean.
   d. If student get the Dean's permission, then during the study suspension period, students are exempt from the BPP.
   e. Study suspension is not taken into account within the maximum time limit for a student's study period.
   f. Students who get permission to suspend their studies are not entitled to academic services.
3. Temporary study suspension without the permission of the Dean, is subject to the following sanctions:
   a. To re-register must submit a written application to the Rector, through the Dean.
   b. The study suspension period without the Dean's permission is calculated within the maximum time limit for the study program.
   c. Pay tuition fees and practicum fees payable, and for the next semester payments are charged according to new student rates.
4. Stopping studies for two semesters consecutively or separately, with the reasons as mentioned in point 3 (2) after the previous semester obtained the letter K for all semester expenses, it is deemed to temporarily suspend studies with the permission of

the Dean for two semesters; thus the student is no longer allowed to temporarily stop his studies.

5. The study suspension should not be carried out temporarily on:
   a. Semester I, and/or
   b. Semester II, and / or
   c. One and / or two semesters before the study deadline. Thus, students are not allowed to temporarily stop their studies, either with or without permission in semester XIII and / or semester XIV. Students who temporarily stop their studies without permission in the above semesters are considered to have withdrawn.

Graduation and Academic Degrees

1. Students of Master Program who have passed the program will receive a Graduation Certificate (if needed), Academic Transcripts, and Diplomas, if : Submit hard and soft copies of the thesis no later than 1 (one) month if the correction is minor and 3 (three) months if the correction major; and Submitting a cover letter after completing the administration of the Master of Pharmacy Study Program.

2. Graduates can attend graduation if they have fulfilled the requierements as stated in point 1.

3. Diplomas and Academic Transcript will be submitted no later than 1 (one) week after graduation at the Unpad Integrated Service Center.

4. Graduates of the Master of Pharmacy Study Program are given the right to use the academic title of Master of Pharmacy (M.Farm.)

CHAPTER IV ACADEMIC SANCTIONS

Academic sanctions can be in the form of academic warnings and/or termination of studies. The study termination sanction is proposed by the study program/faculty and decided by the Rector.

4.1 Academic Warning

Academic warning is in the form of a letter from the Vice Dean addressed to parents/ guardians or funding institutions to inform student's lack of academic achievement or violations of other provisions. Academic warning is carried out to warn the student in order to not to experience the termination of study.

Academic warning is imposed on students who at the end of the second semester and the semesters thereafter have a GPA below 2.00 and / or the amount of credit savings is less than 50% of the total credits that should be taken.

4.1.1 Academic Warning Due to Administrative Negligence

Academic warning is imposed on students of the Master of Pharmacy Study Program who neglect administrative obligations (not registering / re-registration, etc.) for one semester.

4.2 Study Termination

With the stipulation of termination of study, it means that students are expelled from Universitas Padjadjaran because their performance does not comply with applicable regulations, administrative negligence, and/or negligence in participating in learning activities. Reports on student conditions who must be given an academic warning as a result of negligence, attached with the proof of academic achievement and/or evidence of negligence.

1. A warning letter to the student concerned from the Faculty Leader (Dean/Vice Dean)

2. A letter requesting consideration of students who have violated the law from the Faculty Leader (Dean /Vice Dean) to the Faculty Senate.
3. The decree violate /does not violate the law on behalf of the student concerned from the Faculty Senate
4. A letter of application for termination of study on behalf of the student concerned from the Faculty Leader (Dean / Vice Dean) to the University Leaders (Rector / Vice Rector I)
5. Letter of approval / rejection of the study termination of the student concerned from the University Leadership (Rector / Vice Rector I)
6. Academic transcripts that have been taken by the student while studying at Universitas Padjadjaran, signed by the Head of the Faculty (Dean/Vice Dean)

Study termination is imposed on students who experience one of the conditions that exceeds the set cumulative study time limit.

4.2.1 Termination of Study Due to Administrative Negligence

Termination of study is imposed on students of the Pharmacy Masters Study Program who stop their studies for two consecutive semesters or at different times without the permission of the Rector.

4.2.2 Termination of Study due to Failure to Participate in Teaching and Learning Activities

Termination of study is imposed on the Master of Pharmacy Study Program that has registered or re-registered administratively, but:

1. at the end of semester II (two) obtains a GPA below 3.00;
2. at the end of semester I (one) and semester II (two) obtain a letter of quality below C;
3. at the end of semester III (three) has not conducted a Seminar of Research Proposal or has not passed a Seminar of Research Proposal for the second time;

4. at the end of semester VIII (eight) cannot complete the study;
5. at the end of semester VIII (eight) does not or does not have scientific articles according to the graduation requirements;
6. for 2 (two) consecutive semesters or at different times do not register;
7. doing things that defame the good name of the alma mater (Unpad), commit plagiarism, and / or violate scientific ethics.

4.3 Other Academic Sanctions

1. Academic sanctions are imposed on students who commit disrespectful actions in the teaching-learning process, both academic and non-academic, or violate the law, and / or commit immoral acts.
2. The determination of academic sanctions for certain cases (data plagiarism, discussion plagiarism, not mentioning sources, norms and ethics) is determined based on a recommendation from the Faculty / Graduate School Team.
3. The handling of plagiarism cases refers to the applicable regulations in Unpad and the prevailing laws and regulations.
4. The types of academic sanctions are determined based on the prevailing laws and regulations by the Advisory Commission, which consists of:
   a. University representatives (Rector / Vice Rector for Academic and Student Affairs / Director of Education and Student Affairs); and
   b. Representatives of Masters Education administering institutions (Dean of the Faculty / Postgraduate School, Deputy Dean, Chairperson / Secretary of the Masters Study Program, and Chief Advisor).
5. The results of the Advisory Commission agreement are then followed up by signing the Minutes as the basis for determining the decision.

4.3.1 Not completing KRS and not participating in Teaching and Learning Activities in Semester I and / or Semester II

Students who have registered administratively in semester I and / or semester II, either filling in KRS but not participating in teaching-learning activities or not completing KRS at all, without justifiable reasons, are considered resigned and subject to study termination sanctions.

4.3.2 Not Filling KRS

Students who have registered or re-registered administratively, but do not complete KRS (do not participate in teaching and learning activities) without justifiable reasons, are subject to the following sanctions:

1. Given a stern written warning by WD I not to repeat;
2. The semester left is calculated within the maximum time limit for completion of the study;
3. If this action is repeated, either in the following semester or in another semester, students will be subject to study termination sanctions.

4.3.3 Resign After the Change of KRS

Students who withdraw from one or more courses after the KRS change deadline without a justifiable reason (for example, illness, accident, or accident) are subject to the following academic sanctions:

1. The courses that are abandoned are declared not passing (given the letter quality E);
2. The letter E quality is used in calculating the Grade Point Average (GPA);
3. Got a warning letter from Vice Dean to not repeat.
4. The abandoned semester is calculated within the maximum time limit for completion of the study;
5. If this action is repeated, either in the following semester or in another semester, students will be subject to termination of their studies

4.4 Sanctions for Non Academic Violations

If a student commits a violation, after discussing it with the Faculty Senate, he will be subject to special sanctions, while the handling of criminal matters will be left to the authorities. The types of violations are like:

1. **Violation of Law**
   Students who violate the law are subject to special sanctions in the form of academic suspension during the legal process, after being discussed with the Faculty Senate, while criminal matters are handed over to the authorities. Students who violate the law and have been legally found guilty by a court that has permanent legal force, will be subject to sanctions in the form of termination of study by the Rector. in accordance with applicable regulations.
2. **Violation of Moral Ethics and Professional Ethics**
   Students who violate moral, professional ethics (examining patients / clients without supervision, making prescriptions, conducting consultations without supervision, etc.), falsifying signatures and the like, will be subject to sanctions in the form of suspension by the Dean until termination of studies by the Rector.
3. **Violation of Academic Ethics**
   Students who violate academic ethics, including cheating, plagiarizing (papers, reports, Final Project Reports, Thesis, etc.), plagiarism, leaking questions or similar, will be subject to sanctions in the form of academic suspension by the Dean until termination of studies by the Rector.

4.5 Other Sanctions

All activities that disturb public order and immoral acts in the campus environment are subject to sanctions in the form of warnings up to termination of studies.

Basically every student has the right to carry out various activities as part of the academic community, however, as in human life in general, it must be avoided from committing

actions that can be categorized as crimes. These actions include:

1. Brawls between students, whether carried out inside or outside the campus environment that cause damage to other people's property and / or injured victims. The perpetrator of an act that causes damage or a victim of injury may be subject to the provisions of Article 406 of the Criminal Code concerning the destruction of property and Article 351 of the Criminal Code concerning persecution. The provisions in Article 406 and Article 351 of the Criminal Code can also be imposed on demonstrations that are disorderly and cause riots resulting in damage to other people's property and / or injured victims.
2. Drinking alcohol, both inside and outside the campus environment that disturbs public security. The provision that can be imposed is Article 492 regarding public security breaches.
3. Using narcotics, either for yourself or giving narcotics to others both inside and outside the campus environment. The provisions that can be imposed are Article 84 and Article 85 of Law no. 22 of 1997 on Narcotics.

In certain cases, the faculty may issue its own decisions that do not conflict with the legal or regulatory provisions above.

CHAPTER V INFRASTRUCTURE

5.1 Facilities

The Faculty of Pharmacy Unpad provides complete, self-owned and adequate facilities to ensure the smooth running of the Tridharma of Higher Education, in order to produce graduates who meet the specified competencies.

The facilities available at the Faculty of Pharmacy Unpad consist of a collection of books, scientific journals (physical and electronic), internet access, computer facilities, notebooks, tablets, LCD projectors, printers, digital cameras, scanners and complete laboratory instruments. Internet network already uses optical fiber with a bandwidth of 84 Mbps. All academicians can easily access the internet, due to the availability of adequate access points in all areas in the Faculty of Pharmacy Unpad.

Several courses in the Pharmacy Masters Program have taken advantage of the e-learning program at Universitas Padjadjaran. This program uses Moodle open source and can be accessed at http://elearning.unpad.ac.id/kuliahonline/

PS Masters students can access library facilities on the Unpad campus at Jalan Dipati Ukur Bandung which since 2017 has moved to the Jatinangor campus. This library is known as CISRAL-Unpad or Center of Information Scientific Resources and Library of Universitas Padjadjaran. CISRAL has implemented a digital library since 2003 and to date has a collection of 200,000 (two hundred thousand) books. Another advantage of CISRAL UNPAD is the search for books using the Online Public Access Catalog (OPAC), namely the automated CISRAL book collection tracking system subscribing to electronic journals (e-journals) related to PSPA UNPAD. CISRAL also has facilities such as a Multi Media room to be able to use the internet and access e-journals and e-books, which consists of: Sampoerna Corner room which provides reading books, internet facilities, TV, DVD and CD-Rom. There is a reading room (readingroom) and there is a computer and WiFi that can be used by users. Online access to the collections of the Universitas Padjadjaran library can be done through: Electronic Library (http://lib.unpad.ac.id/), Electronic

Journal (http://jurnal.unpad.ac.id/), Knowledge Management (http: / /repository.unpad.ac.id/) and Online Public Access Catalog (OPAC) (Opac.unpad.ac.id). The central library of Universitas Padjadjaran has various facilities provided to make it easier for the academic community to access the library collections online. Apart from the university website as a vehicle for information, faculty websites were also developed. Until now, it has a book collection of around 200,000 (two hundred thousand) copies. There are various references available in the pharmacy faculty library which can be accessed online by the PSMF academic community including e-books and e-journals..

Another advantage of CISRAL Unpad is book search using the Online Public Access Catalog (OPAC), a book collection tracking system. CISRAL subscribes to an electronic journal (e-journal) which can be accessed by students of the Faculty of Pharmacy Unpad. In addition, CISRAL also subscribes to electronic books (e-books) in various fields of science. CISRAL also has facilities such as a multi-media room to access e-journals and e-books in the form of the Sampoerna Corner, which also provides books, TV, DVD and CD-Rom. At CISRAL, there is a reading room that provides computers and WiFi.

In addition to the facilities at the Faculty of Pharmacy, students also can access various facilities in the classroom, administration room, laboratory, laboratory center, meeting room, sports facilities (badminton indoor sports hall, futsal field, soccer field, and basketball court), art activity room, activity room student affairs, health facilities, ATM platforms, bookstores, canteens, central library, mosque, Technical Implementation Unit (UPT) Medical & Health Center, Unpad Teaching Home (RSP), arboretum, on-campus transportation facilities and other facilities located on three campuses Unpad located in Bandung, Jatinangor and Arjasari.

Students can also access various facilities owned by other parties, such as the facilities at the Hospital dr. Hasan Sadikin Bandung, PT. Prodia Widya Husada and BATAN as well as facilities in various pharmacies, pharmaceutical industries, hospitals and government agencies (Balai POM and Puskesmas).

In the next five years, the Faculty of Pharmacy plans to increase the availability of various facilities, including the addition of laboratory instruments (HPLC, FTIR, UV spectrophotometer, densitometer, PCR, refrigerator, freeze dryer, dissolution device, SPE-vacuum and CO2 incubator), additional equipment. at the Unpad Educational Pharmacy-Kimia Farma, adding office equipment (electronics and furniture), teaching equipment, adding library collections and increasing internet bandwidth.

The management information system and ICT (Information and Communication Technology) facilities used by the Faculty of Pharmacy Unpad are in the form of:

1. Hardware in the form of a computer connected via an intranet and the internet.
   a. Cable network & hot spots covering all areas of the Faculty of Pharmacy, both inside and outside the building.
   b. 3 servers
   c. 143 personal computers, 39 notebooks, 9 tablets and 12 Hubs.
   d. The use of PABX as many as 16 points for direct communication services between divisions and between administrative rooms.
2. A sufficient number of licensed software
   a. Licensed Windows Operating System and *Office Applications* (*Microsoft Certificate Agrrement*), plus *Open source* applications such as Linux
   b. Otomigen X automation *software* and GDL 4.2 *Digital Library software* which are connected to the IDLN (*Indonesia Digital Library Network*) used in the Unpad Faculty of Pharmacy Library and can be accessed through http://farmasi.unpad.ac.id/perpustakaan
   c. *Moodle E-learning* Universitas Padjadjaran for *e-learning* applications, can be accessed at http://elearning.unpad.ac.id/kuliahonline/
   d. *Plagiaricek software*, is a student's thesis antiplagiarism *software,* which can be accessed via a LAN network.

SIAT (Integrated Academic Information System) https://siat.unpad.ac.id/ was built to facilitate and integrate all

systems related to academic information both in the fields of education and teaching, research, community service and other support. SIAT can be accessed via
https: //siat.unpad. ac.id/index.php/login (for operator login), https://students.unpad.ac.id/ (for student login) and https://staffs.unpad.ac.id/login (for lecturer login).
SIAT contains:

1. PACIS (Padjadjaran Academics Information System) http://pacis.unpad.ac.id
   Application for processing academic data which includes data for new students and old students, the finance department and BAA (Academic Administration Bureau).
   The facilities there are:
   a. Student registration and registration.
   b. Up date student status.
   c. Student bio and profile.
   d. Payment process (e-payment).
   e. Online Graduation.
2. PADI (Padjadjaran Admission) http://padi.unpad.ac.id
   Applications for data processing of Unpad Entrance Examination (SMUP) participants include:
   a. Purchase number and PIN for online registration.
   b. Division of the exam room.
   c. Exam attendance.
   d. Pass participant report.
3. Registration (http://pendaftaran.unpad.ac.id)
   Application for online registration processing, which includes:
   a. Fill in participant biodata.
   b. Checklist of required documents.
   c. Announcement portal.
   d. Download proof of registration.
4. Students (http://students.unpad.ac.id/)
   This application was built as an information portal for Unpad students. The facilities contained in it are:
   a. Filling in student biodata (for up date).
   b. Registration information and billing form.
   c. Academic information.
   d. KRS Online.
   e. Academic calendar

f. Test scores
g. Class schedule and lecture
h. Evaluation of learning outcomes (questionnaire)

This application was originally called the student portal with the address http://mahasiswa.unpad.ac.id, which has now changed to become student students.

5. e-Office (Padjadjaran Linked Mail) http://siat.unpad.ac.id/eoffice)
   Application / system provided to process incoming and outgoing mail workflow in the Universitas Padjadjaran environment. The facilities provided include:
   a. Incoming Mail System.
   b. Outgoing Mail System.
   c. Mail Tracking.
   d. Document Management.
6. *SIMAK BMN (State Property Accounting Management Information System) is an off line reporting system for the use of state property.*
7. Online Alumni Database, is an online alumni database system that can be accessed through http://farmasi.unpad.ac.id/data-alumni.

SIAT has also been integrated with PDPT-DIKTI data (Higher Education Database) or http://forlap.dikti.go.id through a web service that is connected between Universitas Padjadjaran and Kemenristekdikti, to function as evaluation reporting on study programs each semester.

5.2 Infrastructure

The Faculty of Pharmacy Unpad provides complete, self-owned and adequate facilities to ensure the smooth running of the Tridharma of Higher Education, so as to produce graduates who meet the specified competencies.

In 2015, the infrastructure for the Faculty of Pharmacy Unpad was more complete with a grant from the IDB (Islamic Development Bank) in the form of 2 new buildings, complete with the facilities. This new 3-story building, which is named Laboratory Building 2, contains classrooms and laboratories, which are integrated with research rooms, discussion rooms and lecturers' workrooms. A new 2-story Dean building,

contains rooms for faculty and study programs management, academic and administrative service rooms, small meeting rooms, plenary meeting rooms and other rooms needed to support the learning process, including an auditorium room for larger events. The two buildings complement the Laboratory 1 Building, which consists of classrooms, tutorial rooms, CBT Center and laboratories, which are integrated with research rooms, discussion rooms and lecturers' workrooms.

Classrooms, tutorial rooms and discussion rooms are used for lecture activities. The tutorial room is used for lectures using the SCL learning method and student comprehensive sessions. The auditorium room is used for guest lectures, guest visits or as a paper-based examination room (Paper Based Test). The Computer Based Test (CBT) method was conducted at the CBT Center.

Various laboratories and dry laboratories (Teaching Dispensatory), student research workspaces are available for use by students. The spacious library room is equipped with an adequate reading room. Comfortable open space for study and discussion, canteen, BEM Kemafar room, music room with band and angklung equipment and sports field. A large vehicle parking lot can meet the parking needs of lecturers, students and guests. Unpad Faculty of Pharmacy has Unpad-Kimia Farma Educational Pharmacy, medicinal plant garden and Padjadjaran 3 Dormitory for first year students. The Faculty of Pharmacy Unpad also has a fostered village, namely in Cilayung Village, Jatinangor District, Sumedang Regency, as a place for routine community service implementation.

In addition to infrastructure at the Faculty of Pharmacy Unpad, students can also access various academic and administrative infrastructure, laboratories, laboratory centers, meeting rooms, sports infrastructure (badminton indoor sports hall, futsal field, football field, and basketball court), art activity room, student activity room. Health facilities, ATM platforms, bookstores, canteens, central libraries, mosques and the Technical Implementation Unit (UPT) of the Medical & Health Center which provides health services in the form of Emergency Unit (UGD), doctoral practice, outpatient care, inpatient care and referral to a more complete hospital (generally the Hasan Sadikin Hospital). Universitas Padjadjaran also has Unpad

Teaching Hospital (RSP), arboretum and other infrastructure located on three Unpad campuses located in Bandung, Jatinangor and Arjasari.

Unpad Faculty of Pharmacy students can also access various infrastructures owned by other parties, such as the facilities of dr. Hasan Sadikin Bandung, PT. Prodia Widya Husada and BATAN. In the next five years, there will be expansion of the CBT space.

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CHAPTER VI RESEARCH, COMMUNITY SERVICE AND COOPERATION

6.1 Researches

Various researches by lecturers of the Master program in Pharmacy at the Faculty of Pharmacy Unpad are funded from various sources. At the university level, there is ALG (Academic Leadership Program) research funding for professors and PUPT (Higher Education Excellence Research) funds. National scale research, such as Competitive Grants according to National Priorities, Foreign Cooperation Grants and International Publications, National Strategic Competitive Grants and Incentive Programs are funded by the Ministry of Research, Technology and Higher Education, the Ministry of Health and several private institutions. The amount of the grant varies depending on the qualifications of the researcher, the scale of the research and the final product produced. Research is generally carried out in groups involving lecturers, students and educational staff, which produce scientific publications, patents and commercial products.

All research activities in the the Master program in Pharmacy at the Faculty of Pharmacy Unpad are carried out in an integrated manner and in coordination with the Directorate of Research, Community Service and Innovation (DRPMI), Universitas Padjadjaran. Monitoring and evaluation of activities and reporting is carried out regularly by faculties, universities and funders to ensure the quality, relevance and productivity of activities.

Most of the research results from the academic community of the the Master program in Pharmacy at the Faculty of Pharmacy Unpad are used as materials for learning / education and are applied in the community in the form of community service activities. The results of this research are also published in the form of scientific presentations or scientific articles in accredited national journals and reputable international journals. This is in accordance with the vision of the Master of Pharmacy Study Program at the Faculty of Pharmacy Unpad, namely "Becoming a Superior Study

Program in the Implementation of Research-Based and International Competitive Masters in Pharmacy Education in 2024" and one of the points on its mission is "Organizing research-based master of pharmacy demands of the user community and international competitiveness". Research-based education and community service (Transformative Learning) are the hallmarks of Universitas Padjadjaran in organizing higher education tridharma activities.

Currently, the Faculty of Pharmacy Unpad has 4 scientific journals that are published regularly, namely "Farmaka" as a forum for publication of Unpad Faculty of Pharmacy students, "Indonesian Journa of Clinical Pharmacy l" as an accredited national scientific journal, "Indonesian Journal of Pharmaceutical, Science and Techology" as a publication. National scientific journals have not been accredited as well as international journals "Pharmacology and Clinical Pharmacy Research". Each journal has special personnel (lecturers and education staff) who are trained in professional journal management.

6.2 Community service

Service / community service activities for lecturers of the Pharmacy Masters Study Program at the Faculty of Pharmacy Unpad are funded by various sources, including from Unpad DIPA funds in the form of priority PPM (Community Service) funds and integrated KKNM-PPMD funds. Other sources of funds come from the Ministry of Research and Technology in the form of grants (IbM Grants) and other institutions such as PT. Prodia, PT Kimia Farma and the West Java Provincial Health Office in the form of a cooperation fund.

The amount of funds from DIPA Unpad can fund outreach activities, training or simple demonstrations, while other sources of funds are able to fund entrepreneurship programs or application of research results for the community.

Various service / community service activities are applications of the research results of the Unpad Faculty of Pharmacy academic community, in accordance with the vision of the Unpad Faculty of Pharmacy Master of Pharmacy Study Program, namely "Becoming a Superior Study Program in

Organizing International Competitive Research-Based Master of Pharmacy Education in 2024“. This is also in accordance with one of the points on its mission, namely "To carry out community service by taking advantage of research results in the field of pharmacy". Research-based education and community service (Transformative Learning) are the hallmarks of Universitas Padjadjaran in organizing higher education tridharma activities.

The Faculty of Pharmacy Unpad has a fostered village, namely Cilayung Village, Jatinangor District, Sumedang Regency as a routine location for the implementation of services / community service from the academic community of the Faculty of Pharmacy Unpad.

All service / community service activities at the Faculty of Pharmacy Unpad are carried out in an integrated manner and in coordination with the Directorate of Research, Community Service and Innovation (DRPMI), Universitas Padjadjaran. Monitoring and evaluation of activities as well as reporting are carried out periodically by faculties, universities and funders to ensure the quality, relevance and productivity of activities.

6.3 Cooperation

To increase the quantity and quality of higher education tridharma activities, the Master of Pharmacy Study Program at the Faculty of Pharmacy, Universitas Padjadjaran has collaborated with various agencies, both at home and abroad. This collaboration is coordinated by the Research Manager, PPM, Innovation and Cooperation, Faculty of Pharmacy Unpad.

6.3.1 Cooperation in the Education Sector

In the field of education, the the Master program in Pharmacy at the Faculty of Pharmacy, Universitas Padjadjaran has collaborated with various universities that provide pharmacy education throughout Indonesia, which are members of the Indonesian Pharmacy Higher Education Association (APTFI). APTFI regularly holds meetings to improve the quality and standardization of pharmaceutical master's education in Indonesia.

The Master program in Pharmacy, the Faculty of Pharmacy, collaborates with various universities abroad in the form of guest lectures, workshops and bench marking. The guest lectures and workshops that have been held involve teaching staff from Gunma University (Japan), Yonsei University (Korea) and Universiti Sains Malaysia (USM), Chiba University (Japan), National University of Singapore (Singapore).

Bench marking activities for several staff of the Pharmacy Faculty Master of Pharmacy Study Program have been carried out to various universities in Indonesia and abroad, such as the College of Pharmacy, Monash University (Australia).

Educational collaboration with institutions abroad has provided opportunities for further study for lecturers and alumni of the Faculty of Pharmacy Unpad at universities where cooperation, lecturers in collaborating institutions become resource persons for public lectures, guest lectures, international workshops or seminars, organizing joint international seminars and student exchanges and lecturers.

To improve the competence of graduates, the Pharmacy Faculty Master of Pharmacy Study Program has collaborated with the pharmaceutical industry, pharmaceutical wholesalers, government agencies and various pharmaceutical service facilities, such as pharmacies, hospitals and health centers, especially as presenters in public lectures, guest lectures, workshops and national / international seminars. The collaborating parties also provide feedback used for improvement and evaluation of curriculum and graduate competencies.

6.3.2 Research Cooperation

In the field of research, the the Master program in Pharmacy at the Faculty of Pharmacy Unpad has collaborated with various institutions at home and abroad. Research collaborations that have been established with various domestic agencies include LIPI, BPPT, BATAN, PT. Kimia Farma, PT. Prodia, PT. Jamu Borobudur, Darya Padma Enoes, PT Inertia Utama, PT Midix Graha Farma, PT Martina Berto,

and various pharmaceutical service facilities, such as pharmacies, hospitals and health centers, especially as a place for student and lecturer research.

Research collaborations that have been established with various foreign agencies include:

1. *Post Doctoral Research* at Toyama Medical and Pharmaceutical University (Jepang).
2. *Joint Research* with Hohenheim Universitat (Stutgart, Jerman).
3. *Joint Research* with University of the Phillipine (Manila, Filipina).
4. *Post Doctoral Research at* Department of Pharmacy and Biology Munich University (Jerman).
5. *Training Course* at Faculty of Agriculture Kyoto University (Jepang).
6. *Joint Research* with Osaka Prefecture University (Jepang).
7. *Post Doctoral Research* at Institut of Pharmacy – Ludwig Maximilliam (Munich, Jerman).
8. *Post Doctoral Research* at Department of Chemistry, University of Braunsweigh (Jerman).
9. *Post Doctoral Research* at Freie Universitat Berlin – Jerman.
10. *Sandwich Research* with Yonsei University (Korea).
11. *Joint Research* with Graduate School of Medicine, Gunma University (Jepang).
12. *Sandwich Research* with INSA, Toulouse (Perancis).
13. *Joint Research* with Monash University, Australia.
14. *Joint Research* with Universiteit Twente
15. *Joint Research* with Vrije University
16. *Joint Research with* Universitas Pompeu Fabra Barcelona
17. *Joint Research* with Faculty of Science Leiden University
18. *Joint Research* with Chiang Mai University
19. *Joint Research* with China Pharmaceutical University
20. *Joint Research* with Vienna University
21. *Joint Research and double degree program* with Rutgers University the state of new jersey
22. *Joint Research* with Tsukuba University
23. *Joint Research* with Chiba University
24. *Joint Research* with Groningen University
25. *Joint Research with* Glouchestershire University

6.3.3 Cooperation in the Field of Community Service

In the field of community service, the Master program in Pharmacy at the Faculty of Pharmacy Unpad provides services in the form of self-medication training, pap smear examinations and free medical examinations, in collaboration with PT. Prodia and PT. Kimia Farma. In addition, various health education activities were carried out in collaboration with BPJS and the Indonesian Ministry of Health.

To improve the quality of pharmaceutical care, the Master program in Pharmacy of the Faculty of Pharmacy has collaborated with the West Java Provincial Health Office in the form of clinical pharmacy training for health workers at health centers.

In 2005, the academic community of the Master program in Pharmacy at the Faculty of Pharmacy participated in building the image of herbal medicine as a traditional Indonesian medicine, through the Traveling Exhibition on Jamu in 4 countries, namely Indonesia, the Netherlands, Singapore and Greece. This activity was held in collaboration with the National University of Singapore (Singapore), Leiden University (Netherlands), Maich University (Greece), Martha Tilaar Foundation and Bapak Anak Agung Gde Agung.

In 2010 and 2017, the Master program in Pharmacy held international seminars, expos and workshops on herbal medicine. In this activity, the community was introduced to the existence of herbal medicine as a traditional Indonesian medicine which has gone global.

Faculty of Pharmacy Unpad also has an Education Pharmacy, which collaborates with PT. Kimia Farma Apotek, as a place for implementing education, research and community service for lecturers and students of the Faculty of Pharmacy.

The satisfaction statement of the collaborating parties was obtained from the feedback form and questionnaire provided by the Faculty of Pharmacy Unpad, either by email or given during direct visits.

CHAPTER VII STUDENT AND ALUMNI

7.1 Student

7.1.1 Student Development System

The main objective of student development in the Master program in Pharmacy at the Faculty of Pharmacy Unpad is to support and endeavor to complement intracurricular activities with co-curricular activities, so that graduates have added value in the form of organizational experience, actualization and self-development, sensitivity to the surrounding environment and upholding the value of togetherness.

Since 2015, Students of the the Master program in Pharmacy have a forum to carry out student activities together with students of the Clinical Pharmacy Masters Study Program and the Doctoral Study Program in the Postgraduate Student Association of the Faculty of Pharmacy, Universitas Padjadjaran. Some of the activities that have been carried out in 2016 and 2017 are the provision of workshops "How to Publish in Accredited National Journals and Reputable International Journals" in collaboration with the Indonesian Clinical Pharmacy Journal and seminars and HPLC training for research. Apart from academic activities, postgraduate associations also regularly carry out sports and arts activities together with Kemafar.

7.2 Alumni

Universitas Padjadjaran Postgraduate Program alumni are gathered in the Unpad Postgraduate alumni association. One of the goals of the establishment of this alumni association is to provide input to the study programs, especially in the curriculum, in order to be more applicable and in accordance with the actual situation in the field.

Consequently, alumni of the Master program in Pharmacy is member of the Faculty of Pharmacy Unpad alumni association, which are not separated from the postgraduate alumni association. To date, there are 4000 alumni registered

at the Faculty, who are spread across the nation. The Alumni Association, embodied in the **Alumni Association of the Faculty of Pharmacy** as part of the **Alumni Association (IKA) Universitas Padjadjaran**. This association is a forum for all alumni, both undergraduate, pharmacists and masters who have AD/ART, vision - mission and work programs that are in line with both academic and non-academic educational goals at the Faculty of Pharmacy, Universitas Padjadjaran. Alumni association is seen as one of the important pillars in the progress and development of the institution. The name of the Faculty of Pharmacy Alumni Aassociation is the **Ikatan Alumni Universitas Padjadjaran Komisariat Fakultas Farmasi (KOMFAK Farmasi).**

The active role of alumni in collecting and providing financial assistance has been demonstrated both in the form of individuals and on behalf of the Faculty of Pharmacy Unpad. Since 2011, formal fundraising has been carried out with the Decree of the IKA Pharmacy Unpad Management which reforms the membership by carrying out her-registration and is required to pay member fees. 50% of the fundraising results are allocated to be donated to the Faculty in the form of scholarships and assistance for faculty activities. Almost every year IKA Pharmacy conducts major activities in the form of national seminars and alumni gatherings. In the big event, a number of funds were collected which were used to assist the faculty according to agreed needs. In addition, there are also scholarships for student study assistance from various generations.

The Alumni Association donates educational facilities in the form of books, equipments and research materials that are donated/lent as well as provides places for simulation of drug counseling for students who will work in the service sector in order to help implement education in the faculty of pharmacy. In addition, the alumni workplace can also be used as a research place for master students of the Faculty of Pharmacy.

Alumni have formed a wide and strong network through the institutions where theywork to provide information such as job vacancies, training activities and seminars. In addition, social networks such as Facebook and the mailing lists on the *yahoo group* and WhatsApp (instant messaging application)

have also strengthened friendship, communication and information between alumni with their alma mater. This network is also often used as a means of information on job vacancies for new alumni.

Alumni also play an active role in providing input on learning activities such as being involved in the curriculum evaluation process, therefore the material provided can meet the needs of stakeholders. As one example, in the alumni forum there is a community of alumni who work in industry who provide input related to the curriculum in order to in order to be in synergy with the field of work.