ASIIN

ASIIN Seal

Accreditation Report

Master's Degree Programmes
Dental Health Science
Pharmaceutical Sciences

Provided by
Universitas Airlangga, Surabaya

Version: 8 December 2023

Table of Content

A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for [1]	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)[2]
Magister Ilmu Kesehatan Gigi	Master of Dental Health Science	ASIIN	LAMPT-Kes[3] "A" 2021-2026	14
Magister Ilmu Farmasi	Master of Pharmaceutical Sciences	ASIIN	LAMPT-Kes "A" 2021-2026	09
Date of the contract: 10.10.2022 **Submission of the final version of the self-assessment report:** 06.06.2023 **Date of the audit (online):** 29.08. – 30.08.2023				
Expert panel: Prof. Dr. Michael Keusgen, University Marburg Prof. Dr. Gerhard Scriba, University Jena Ass. Prof. Dr. Kartika Andari Wulan, Universitas Brawijaya Dr. med. dent. Thomas Koch, MedUni Graz Andi Maqhfirah Nurul Fitri, Universitas Hasanuddin, student				
Representative of the ASIIN headquarter: Rainer Arnold				
Responsible decision-making committee: Accreditation Commission				

[1] ASIIN Seal for degree programmes;
[2] TC: Technical Committee for the following subject areas: TC 09 – Chemistry, Pharmacy, TC 14 – Medicine
[3] TC: Indonesian Accreditation Agency for Higher Education in Health (LAMPT-Kes)

Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria as of 28.03.2014	

B Characteristics of the Degree Programmes

a) Name	Final degree (original)	b) Areas of Specialization	c) Corresponding level of the EQF[4]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Ma Dental Health Science	Magister Kesehatan / Master of Health Science	-	7	Full time	-	4 Semester	40 credits / 120 ECTS	Once a year (September), 1980
Ma Pharmaceutical Sciences	Magister Ilmu Farmasi/ Master of Pharmaceutical Sciences	-	7	Full time	-	4 Semester	38 credits (114 ECTS)	Once a year (September), 1984

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[4] EQF = The European Qualifications Framework for lifelong learning

For the <u>Master's degree programme Dental Health Science</u> (MoDHS), Universitas Airlangga (UNAIR) has presented the following vision and mission in the Self-Assessment Report:

"Vision:

To become a leading Master's Program in Biomedical Dental Science and to create innovations through interdisciplinary and multidisciplinary research approaches which receive national and international recognition based on religious morals.

Mission:

The Dental Health Sciences Master's Program arranges its mission based on the implementation through three pillars; education, research, and community outreach program, as listed below:

1. Providing excellent Master's Program in biomaterial, oral biology, dan community dental health with advanced technology and science.

2. Conducting research in biomaterial, oral biology, and dental health community for the advancement of science at the national and international levels.

3. Dedicating the innovation in science and technology of dentistry and ethically for the development of oral and dental health community."

For the <u>Master's degree programme Pharmaceutical Sciences</u> (MoPS), Universitas Airlangga (UNAIR) has presented the following vision and mission in the Self-Assessment Report:

VISION

The vision of the Master Study Program of Pharmaceutical Sciences is to become an innovative leading postgraduate program at the national and international levels, excellent in pharmaceutical science based on religious morality.

MISSION

1. Organize an innovative education by applying modern learning methods and technology based on religious morality.
2. To develop basic, innovative, and applied pharmaceutical science and technology research.
3. To carry out community service in the form of disseminating pharmaceutical science and technology research as a manifestation of social responsibility for empowering and improving the quality of life of the Indonesian people.
4. To produce superior, formidable, religious, moral, competitive, and collaborative graduates at national and international levels.
5. To develop a collaborative network at the national and international levels, with the target of developing education, research, and community service programs.

OBJECTIVE

1. To produce graduates who are able to develop up-to-date knowledge and technology in the field of pharmaceutical sciences through research and produce innovative and tested work.
2. To produce graduates who are able to solve problems of knowledge and technology in the field of Pharmaceutical Sciences through an inter- or multidisciplinary approach.
3. To produce graduates who are able to manage research and development that are beneficial to society and science and gain national and international recognition.
4. To produce cooperation that supports the implementation of education, research, and community service in Higher Education through the development of quality-oriented management and the ability to compete internationally.

C Expert Report for the ASIIN Seal

1. The Degree Programme: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)

Evidence:

- Self-Assessment Report

- Study plans

- Module descriptions

- Homepage UNAIR: http://www.unair.ac.id

- Homepage Master Dental Health Science: http://fkg.unair.ac.id/magister/

- Homepage Master Pharmaceutical Science: https://s2if.ff.unair.ac.id/

- Discussions during the audit

Preliminary assessment and analysis of the experts:

Universitas Airlangga (UNAIR) has described programme specific vision and mission, a graduate profile and Programme Learning Outcomes (LO). While the vision and mission are rather general and refer to the vision and mission of UNAIR, the LO cover specific competences, which students should acquire during their studies. The LO refer to the Indonesian Qualifications Framework (KKNI) and the National Standards for Higher Education (SNPT), which include the areas of attitude, general skills, knowledge, and specific skills.

The experts base their assessment of the intended learning outcomes on the information provided in the Self-Assessment Report of the Master's degree programme Dental Health Science (MoDHS). They come to the following conclusions:

The LO and the graduates' profile has been designed under consideration of the input given by internal and external stakeholders. Internal stakeholders include the teaching staff and students, whereas external stakeholders include the Indonesian Dental Collegium (KDGI), the Indonesian Ministry of Health, and the Indonesia Dental Association (PDGI), as well as employers and representatives of health care institutions.

The <u>Master's degree programme Dental Health Science</u> aims to increase the knowledge of students so that they produce graduates, who have advanced theoretical and applied knowledge in the areas oral biology, dental materials, and community dentistry.

Students of the <u>Master's degree programme Dental Health Science</u> should learn advanced concepts and theories of oral biology, biomaterials, and dentistry and be able to solve advanced problems in these areas. Additionally, they should be able to participate in developing new concepts in health sciences and develop innovative products, especially in the fields of dental and oral health, biomaterials, and public dental health, thereby helping to prevent and solve dental and oral health problems. Moreover, they should be able to perform general physical examinations, establish a diagnosis, and formulate a treatment plan to help patients through, preventive, curative, and rehabilitative measures.

As described in the Self-Assessment Report, graduates of the <u>Master's degree programme Dental Health Science</u> should have a high personal integrity, and be able to work professionally and with high morality. In addition, they should be open-minded, able to cope with changes in science and technology, and be responsive to problems, in the community, related to their expertise. Graduates of the can find suitable jobs as professional dentists, researchers, university teachers, and health care managers. As researchers, they should be able to conduct research activities related in dental sciences, to communicate the results and thereby contributing to the benefit of the community. Graduates should also be able to manage health care systems by working together with other health professionals with the goal of reducing dental diseases and fostering a healthy lifestyle.

The majority of MoDHS students have professional degree in dentistry and are employed by public or private institutions or have an independent practice. After graduation, almost all of them will return to work for their respective employer.

The experts base their assessment of the intended learning outcomes on the information provided in the Self-Assessment Report of the <u>Master's degree programme Pharmaceutical Sciences (MoPS)</u>. They come to the following conclusions:

The intended learning outcomes of the <u>MoPS programme</u> were designed under consideration of current scientific developments in the field of pharmacy covering various aspects ranging from the drug industry, cosmetics, medical devices, and chemicals as well as pharmaceutical services in pharmacies, hospitals, and other health institutions.

Graduates of the <u>MoPS programme</u> should be competent in developing and applying substances for pharmaceutical preparations from both natural ingredients and chemical synthesis including active molecular manipulation (polymorphs, nano particles, solid disper-

sion) and biological mimicry systems. Additionally, graduates should be able to solve advanced pharmaceutical problems in the development and manufacturing of drugs including quality control of the bioavailability and the feasibility of the delivery system by applying in-vito and in-vivo analysis methods. This can result in designing concepts of quality assurance for pharmaceutical preparations in therapeutic and manufacturing facilities as well as in recommendations for analytical methods to ensure the quality of pharmaceutical products, food, and beverages.

Finally, graduates of the MoPS programme should contribute to developing new methods and technologies in the field of pharmaceutical science through conducting and disseminating research activities. To achieve this goal, students should learn how to critically reflect current scientific publications in their area of interest and how to design and implement a research plan for their own scientific project.

As described in the Self-Assessment Report, graduates of the MoPS programme should find suitable jobs as researcher in order to develop innovative products and technologies in the field of pharmaceutical science, as problem solver in order to solve advanced problems in the field of pharmaceutical sciences through an inter or multidisciplinary approach, or as managers, who manage research and development that benefits society and science and gets national and international recognition.

In order to verify that the intended learning outcomes of the MoPS programme are covered by the curriculum, UNAIR has submitted a matrix that shows, in which course which learning outcomes are targeted. Thus, the experts can deduce how each course contributes to achieving the intended learning outcomes.

In summary, the experts are convinced that the intended qualification profiles of the Master's degree programme Dental Health Science as well as of the Master's degree programme Pharmaceutical Sciences are reasonable and well founded and allow graduates to take up an occupation, which corresponds to their qualification. The degree programmes are designed in such a way that it meets the goals set for it.

The experts conclude that the objectives and intended learning outcomes of both Master's degree programme adequately reflect the intended level of academic qualification (EQF 7).

Criterion 1.2 Name of the degree programme

Evidence:
- Self-Assessment Report

Preliminary assessment and analysis of the experts:

UNAIR awards a "Master of Pharmacy" (M. Farm.) to the graduates of the <u>Master's degree programme Pharmaceutical Sciences</u> and a "Master of Health" (M. Kes.) to the graduates of the <u>Master's degree programme Dental Health Science.</u>

The experts confirm that the English translation and the original Indonesian names of the <u>Master's degree programme Dental Health Science</u> as well as of the <u>Master's degree programme Pharmaceutical Sciences</u> correspond with the intended aims and learning outcomes as well as the content of the respective degree programme. However, it would be more appropriate to award a Master's degree in Dental Health science to MoDHS graduates. As the programme coordinators explain during the audit, this is not possible due to national regulations.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report

- Study plans

- Module descriptions

- Academic Handbooks

- Discussions during the audit

Preliminary assessment and analysis of the experts:

The <u>Master's degree programme Pharmaceutical Sciences</u> is designed for four semesters and encompasses 38 Indonesian credits (=114 ECTS), the maximum length of studies is eight semesters. The programme offers seven specializations/concentrations namely:

1. Pharmaceutical Analysis,

2. Natural Product Chemistry,

3. Drug Development,

4. Pharmaceutical Biomedics,

5. Drug Delivery System,

6. Cosmetics,

7. Pharmaceutical Policy and Management.

All students are required to choose one specialization/concentration at the time of registration, which will be confirmed during the admission interview.

The focus in the first two semesters is on theoretical classes and course work, which includes the following compulsory courses: "Research Methodology", "Philosophy of Science", and "Statistics". These three courses (6 SKS) have to be taken by students of all specialisations. Additional 10 SKS have to be covered by the students in the first semester, which includes five courses according to their specialisation. The second semester only includes specialisation courses (14 SKS) and two elective courses (4 SKS) to support the choice of o a research topic. The focus in the third and fourth semester is on preparing and conducting the thesis, as well as writing a scientific publication.

The Master's degree programme of Dental Health Science is designed for four semesters and encompasses 40 Indonesian credits (=120 ECTS), the maximum length of studies is eight semesters. The courses include compulsory subjects (20 SKS), elective courses (8 SKS), and the research project, consisting of thesis proposals, research, seminar, and written thesis (12 SKS). The Faculty of Dental Medicine focuses in its research activities on oral biology, biomaterials, and community dental health. As a result, the electives can be chosen from these three fields. The compulsory courses are offered in the first and second semester and include the following courses: "Advanced Oral Biology", "Advanced Dental Public Health", "Advanced Biomaterial", "Science Philosophy", "Research Methodology and Statistic", and "Referencing Literature". In the third and fourth semester, students design their research project "Research Proposal", conduct the experiments and write down their results "Thesis", and prepare a publication "Scientific Article Writing".

All classes in both Master's programmes are taught in Bahasa Indonesia. However, some lecturers use English in their presentations. In addition, for the oral thesis or proposal defense, students should deliver the presentation in English. If there are international students in the classes, the lectures are usually held in English. Moreover, international guest lectures are regularly invited, who teach their courses in English, and the UNAIR Language Centre offers English language courses. To bridge the gap for international students, all study materials are also provided in English, ensuring that language does not pose a barrier to their successful participation in the programme. The students confirm in the discussion with the experts that they are satisfied with the existing opportunities to improve their English proficiency and the experts cannot see any deficits in this respect.

The experts point out that it is not transparent how MoPS students are prepared for writing and submitting a scientific paper, how much time they spend on this activity, and in what course this work is done. By contrast, the MoDHS programme offers a separate course "Scientific Article Writing", for which 6 SKS or 18 ECTS points are awarded. The experts are

convinced that it would be a good idea to offering a specific course on preparing and writing the publication in the MoPS programme. This way, it is transparent, how much time students spend on this task and they might be better prepared.

During the discussion with the experts, one student points out that the course "Pharmaceutical Polymers" treats other subjects than the course's title suggests and the student are not sure about the output of the courses. The experts suggest that the programme coordinator should talk to the respective teacher and the students if this complaint is justified. If it is corroborated, the necessary steps (adjust the title or the content) should be undertaken.

Another issue is the fact that in the MoPS programme, there are the courses "Instrumental Analysis and Electrochemistry A + B" and "Advanced Spectroscopy A + B". The experts point out that the description of the courses' content is almost identical for course "A" and course "B". As the programme coordinators confirm, the actual content of the courses is different and consequently the respective module descriptions need to be corrected and must reflect the course's content adequately.

The experts emphasise that it would be useful reducing the number of compulsory theoretical courses in the first two semesters of the MoPS programme and to give students the opportunity to get practical experience in different laboratories so that they can better decide on choosing their research topic.

After analysing the module descriptions and the study plan, the experts confirm that the Master's degree programme Dental Health Science as well as the Master's degree programme Pharmaceutical Sciences are divided into modules and that each module is a sum of coherent teaching and learning units. All practical work and internships are well integrated into the curriculum and the supervision by the Faculty of Dental Medicine and the Faculty of Pharmacy guarantees for their respective quality in terms of relevance, content, and structure.

In summary, the experts confirm that the choice of modules and the structure of the curriculum of both Master's degree programmes under review ensure that the respective intended learning outcomes can be achieved.

International Mobility

UNAIR provides some opportunities for students to conduct stays abroad and to join exchange programmes. The International Office (Division of Global Engagement) at UNAIR is responsible for managing and coordinating the international activities such as organising student mobility programmes, developing and maintaining relationships with partner insti-

tutions and organisations around the world, recruiting and admitting international students, providing support and assistance to international students during their time at UNAIR, such as helping with housing, visa issues, and other practical matters.

The Faculty of Dental Medicine has signed cooperation agreements with the Faculty of Dentistry, Mahasa University, Malaysia, Tohoku University, Japan, Universiti Teknologi Malaysia, University of Malaya, Malaysia and Hiroshima University, Japan to exchange guest lectures, to conduct joined research activities, and to prepare joint publications and community development. Additionally, international students regularly take courses in the programme. The MoDHS programme does not offer an international class, but international students are provided with study materials, projects, and examinations in English.

The Faculty of Pharmacy cooperates with the several universities in Asia (Philippines, India, Thailand, Japan, Malaysia) such as Faculty of Pharmaceutical Sciences Burapha University, Thailand, School of Pharmacy, Centro Escolar University Manila, Philippines, Chirkara University College of Pharmacy, India, Chulalongkorn University, Thailand, Hoshi University, Japan, Kobe University Japan, and Faculty of Pharmacy, Thammasat University, Thailand. Both parties agree to cooperate in the areas of research, lectures, conferences and the exchange of researchers and teachers as well as of students.

Taking part at student exchange programmes is possible in the MoPS programme and supported by the Faculty of Pharmacy. For example, five pharmacy students have conducted stays abroad in 2020 and 2021 (in Egypt, Taiwan, and Thailand). In addition, during the COVID-19 pandemic, 13 students attended online courses held by Osaka University and received a grade on their transcript at the end of the semester. Recently, the MoPS programme has signed a Memorandum of Understanding with the Faculty of Tropical Medicine, Mahidol University, Thailand.

Students can apply for the Airlangga Development Scholarship in order to receive financial support for their stays abroad.

The number of incoming students is rather low. Within the last five years there were four international students (one from Pakistan and three from Yemen) enrolled in the MoPS programme and 11 international students (one from East Timor, one from Egypt, and nine from Yemen) were enrolled in the MoDHS programme. When international students are admitted to one of the Master's programmes, they have to take an Indonesian language course for six months, and after they reach the required level, they will be admitted to the study programme. According to the programme coordinators, financial problems restrict students' academic mobility, because there is only partial funding for stays abroad. However, Master's students are encouraged to spend some time abroad, especially in the course of their research activities during their Master's thesis.

During the audit, the programme coordinators explain that Master's students have the opportunity to attend international conferences and to foster internationalisation, UNAIR also hosts international conferences. This includes the International Graduate Student Conference on Pharmaceutical Sciences (IGSCPS) is the annual international conference organized by the Faculty of Pharmacy. This conference is intended to facilitate graduate students in disseminating and publishing their research results, as submitting a scientific publication is a requirement for graduation. The purpose of this conference is to promote research findings in the field of pharmaceutical and healthcare by providing an event to deploy and discover new knowledge and ideas about pharmaceutical and healthcare research both locally and internationally.

Finally, the experts learn during the audit that the Faculty of Pharmacy would like to establish a double degree programme with the University of Sydney, but currently there are no sufficient funds for this project. This is regrettable, of course, and the experts hope that UNAIR will provide the necessary financial resources, at least in the medium term, so that the programme can be carried out with the university. Such a double degree programme would promote the further internationalisation of UNAIR.

The experts confirm that several opportunities for going abroad exist, that the degrees' structure make stays abroad possible, and that student services offer support and advice for students interested in exchange studies at a foreign university. However, the number of outgoing students is still low. Although, there are several international co-operations, especially with Asian universities, only a few students take this opportunity and study abroad. The experts emphasise that students' academic mobility is rather low and should be better promoted by encouraging students to go abroad during their Master's studies, e.g., for preparing their Master's thesis. As almost all of the teachers have international experience, they can use their contacts for sending Master's students for research stays abroad. Several teachers follow this example, but unfortunately Master's students are still reluctant to go abroad for a longer period because they face financial restrictions and have concerns with respect to their English proficiency. Additionally, some students already have a family and do not want to leave them or have a practise and do not want to close this for going abroad.

Moreover, it's important to address some students' concerns regarding the transfer of their credits if they go abroad, as they are uncertain if their transferred credits will be sufficient to meet graduation requirements. To alleviate these concerns and ensure transparency, it would be beneficial for the faculty to provide clear information regarding credit transfer policies. This can help students understanding that their transferred credits will adequately contribute to their graduation progress, alleviating fears of extended study periods.

In summary, the experts confirm that opportunities for international educational exchange for students exist and students are well informed about the offers. Nevertheless, the academic mobility of the Master's students is low and the experts recommend encouraging dentistry and pharmacy students to spend some part of their university education abroad.

Criterion 1.4 Admission requirements

Evidence:
- Self-Assessment Report
- Homepage UNAIR: http://www.unair.ac.id
- Homepage Master Dental Health Science: http://fkg.unair.ac.id/magister/
- Homepage Master Pharmaceutical Science: https://s2if.ff.unair.ac.id/
- National Regulation No. 2, 2015
- Academic Handbooks
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The admission process is handled and managed by the student admission center (PPMB) at UNAIR. The admission center is fully responsible starting from the registration, selection, and admission process for new students. The requirements for each study programme are determined and set by the programme coordinators and approved by the Faculty's Dean.

Admission to the Master's programmes is based on general and specific requirements:

A. General Requirements for the Master's programmes:

1. Indonesian or foreign students who have met the requirements of the applicable legislation and rules.

2. Bachelor degree graduates from accredited public or private universities.

3. Graduates from international Bachelor's degree or Master's degree programmes must hold an overseas diploma equivalency.

4. International applicants must provide a recommendation letter from the Indonesian Embassy in the student's country of residence.

B. Specific Requirements for the Master's degree programmes Pharmaceutical Sciences:

1. Grade Point Average (GPA) of Bachelor degree preferred to be 2.5 or higher.

2. Originated from Bachelor degree in the following areas: Pharmacy, Chemistry, Biology, and Chemical Engineering.

3. Has a draft of research proposal including the amount of costs and its source.

4. Pass admission tests, including Academic Potential Test (Tes Potensi Akademik/TPA) that consists of verbal, numeric, and logical competencies; English test; as well as an interview held by the New Student Admissions Center (PPMB).

5. Pass general medical check up

C. Specific Requirements for the Master's degree programmes Dental Health Science:

1. Grade Point Average (GPA) of Bachelor degree preferred to be 2.75 or higher.

2. Originated from Bachelor degree in the following areas: Medicine, Dentistry, Veterinary, Pharmacy, Nursing, or Public Health.

3. Has a draft of research proposal including the amount of costs and its source.

4. Pass admission tests, including Academic Potential Test (Tes Potensi Akademik/TPA) that consists of verbal, numeric, and logical competencies; English test; as well as an interview held by the New Student Admissions Center (PPMB).

5. Pass a general medical check up

Students can apply online at UNAIR for admission to the Master's programmes. Candidates are required to have a Bachelor's degree with a minimum GPA and to go through an interview process at the respective faculty. During the discussion with the experts, the programme coordinators explain that the applicants are asked about their commitment and motivation for applying for the Master's programmes, about their academic and professional background as well as their social activities. The experts notice that the admission interviews are currently conducted by just one teacher and that it would be more appropriate to have at least two interviewers for each applicant. This way, the outcome of the interview will be more impartial.

In addition, applicants need to submit verification of English proficiency (e.g., TOEFL) and of sufficient academic ability (Academic Potential Test (TPA)). The schedule of admission, the requirements, and the procedures are published and can be accessed via UNAIR's homepage.

The tuition fee in the Master's programmes is 8.5 Mill IDR (510€) per semester for Indonesian students. In addition, there is a registration fee of 10 Mill IDR (600€). International students have to pay a higher tuition fee of 45 Mill IDR (2700€) per semester and a registration fee of 22.5 Mill IDR (1350€).

Some scholarships are available for Master's students at UNAIR. Students can apply for the Airlangga Development Scholarship, for the LPDP scholarship from the Ministry of Finance, or for a scholarship from the Ministry of Health.

The number of applications and new pharmacy students is shown in the following table:

Year	Capacity	Number of Applicants	Number of Enrolled New Students	Number of Active Students
2017/2018	40	40	34	109
2018/2019	40	52	41	94
2019/2020	40	39	32	106
2020/2021	40	35	28	101
2021/2022	40	59	54	123

Table 1: Applications and New Students MoPS, Source: SAR UNAIR

As depicted in table 1, the capacity of the MoPS programme is 40 new students per year. The number of applications is usually a little higher, only during the COVID pandemic, the number of applications was below the intake capacity.

The MoDHS programme has an annual intake capacity of only 20 students. However, the number of applications is lower. As shown in table 2, in the last five years there was an average of 11 applications per year. In 2021/22 the number increased to 19 applications and hopefully this positive trend will continue.

Year	Capacity	Number of Applicants	Number of Enrolled New Students	Number of Active Students
2017/2018	20	6	6	6
2018/2019	20	10	10	10
2019/2020	20	8	8	8
2020/2021	20	12	12	12
2021/2022	20	19	19	19

Table 2: Applications and New Students MoDHS, Source: SAR UNAIR

The details of the application process at UNAIR and further information on admissions criteria and deadlines can be found in the National Regulation No. 2, 2015 and the Academic Handbooks, which is also published on the university's webpage.

The experts discuss with the programme coordinators, why the intake of new students, especially in the MoDHS programme is rather low. They learn that most graduates from Bachelor's programmes in dentistry prefer to work as dentists and only very few students join Master's degree programme with the goal of becoming a researcher or university teacher. To be open for Bachelor's graduates from other areas (e.g. nursing), the Faculty of Dental Medicine accepts these students and offers a bridging programme. The courses in the bridging programme are designed to impart the necessary scientific basis of dentistry so that the respective students can join the MoDHS programme.

During the discussion with the experts, employers suggest offering a part time Master's programme so that students can keep their current job and join a Master's degree programme at the same time. The experts hold the view that this is a useful suggestion and UNAIR might look into this, because this way, the number of applications and students might be increased.

In summary, the experts find the terms of admission to be binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

Criterion 1.5 Work load and credits

Evidence:
- Self-Assessment Report
- Study plans
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Based on the National Standards for Higher Education of Indonesia (SNPT), both programmes under review use a credit point system called Semester Credit Unit (SKS). For regular classes, 1 SKS of academic load for Master's programmes at UNAIR is equivalent to 340 minutes, which includes 170 minutes of structured activities, and 170 minutes of independent learning. There are 16 weeks of academic activities per semester, which includes

14 weeks of lectures and 2 weeks of exams. According to the Rector's decree, in Master's degree programmes, 1 SKS is equal to 3 ECTS points. The experts point out that it is not useful to have a fixed conversion rate between SKS and ECTS points, because the ECTS points should be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course.

Since the workload of the students was only estimated by the programme coordinators, the experts expect UNAIR to re-evaluate the calculation of ECTS points and asking the students about their actual workload, especially the time they need for self-studies, for each course. For example, this could be done by including a respective question in the course questionnaires. By correctly displaying students' workload in ECTS points, UNAIR would facilitate academic mobility and better support their graduates if they apply for international programmes. More information on how the ECTS points are calculated correctly can be found in the ECTS Users' Guide.

In any case, UNAIR needs to verify the students' total workload and make sure that the actual workload and the awarded ECTS points correspond with each other. This information should be made transparent in the module descriptions and the study plans.

The Faculty of Pharmacy and the Faculty of Dental Medicine provide some information on the average GPA and the average length of studies of the MoPS and MoDHS graduates. As can been see from the data, the average GPA was between 3.71 and 3.78 for MoPS graduates and between 3.76 and 3.91 for MoDHS graduates for the last five academic years (2017 – 2021). At the same time, the average length of studies was between 2.0 and 2.71 years in MoPS and exactly 2.00 in MoDHS. This shows that most of the students can finish the degree programme in time and achieve very good grades. The details are depicted in the following table:

No		2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
1	2	3	4	5	6	7
1.	GPA average					
	MoPS	3.71	3.75	3.74	3.78	3.70
	MoDHS	3,76	3,84	3,81	3,90	3,91
2.	Study Period (total year)					
	MoPS	2.00	2.71	2.09	2.00	NA
	MoDHS	2,00	2,00	2,00	2,00	NA

Table 3: Average GPA and length of studies, Source: SAR UNAIR

Finally, the experts point out that the Faculty of Dental Medicine and the Faculty of Pharmacy should verify the students' total workload. After the workload is verified, the faculties have to make sure that the workload is balanced between the semesters and that the

first two semesters are not overloaded. The faculties should work in collaboration with students to achieve this outcome.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

- Self-Assessment Report

- Study plan

- Module descriptions

- Discussions during the audit

Preliminary assessment and analysis of the experts:

Both Master's degree programmes under review apply the following teaching and learning methods: lectures, group discussions, presentations/seminars, case studies, and problem-based learning. During lectures, there are sessions for students to give feedback or discussion in small groups or whole class, not only teacher-centred learning. Lectures can be conducted both offline and online, including guest lectures by practitioners or experts. Presentations, case-studies, and seminars involves students individually or in groups to actively communicate their ideas by explaining or describing the analysis of case studies, reports, or other specific presentation topics systematically. This method is also used for disseminating students' research proposals and theses.

Audio-visual aids and e-learning supplement the attendance-based classes. All courses are supported by the UNAIR Learning Management System (LMS) through the HEBAT e-learning environment. Furthermore, synchronous learning can be held using applications like Zoom, Google Meet, and others to ease the learning process in class. In addition, the interaction between teachers and students via LMS can include assignments, quizzes, forums, submitting material or literature files, and discussions.

Problem and project-based learning and a student-centred teaching approach are applied in most of the advanced courses. These methods comprise several steps, which requires students to gather information, solve problems, make reports, and discuss and present the results. These teaching methods focus on analysing problems and acquiring the skills to draw conclusions based on evidence. In addition, students should learn to work together in a team, to design their learning goals, and to take responsibility for their implementation.

In summary, the expert group considers the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concepts of both Master's degree programmes comprise a variety

of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning).

Student Support

UNAIR offers a comprehensive advisory system for all students. At the start of the first semester, every student is assigned to an academic advisor. Each academic advisor is a member of the academic staff. She or he is a student's first port of call for advice or support on academic or personal matters.

The role of the academic advisor is to help the students with the process of orientation during the first semesters, the introduction to academic life and the university's community, and to respond promptly to any questions. They also offer general academic advice, make suggestions regarding relevant careers and skills development and help if there are problems with other teachers. All Master's students have an academic advisor who discusses with them about possible topics of the thesis and gives suggestions based on the students' interest and the research areas of the respective faculty.

Additionally, there is an orientation week for new Master's students during which they are also introduced to the research topics of the faculty and the research activities of the different teachers.

With respect to helping Master's students in publishing their research results, the Faculty of Dental Medicine has their own scientific journal, where Master's students can publish their papers. In addition, the Faculty of Dental Medicine cooperates with three different journals in the area of dentistry.

The Faculty of Pharmacy publishes the "Jurnal Farmasi dan Ilmu Kefarmasian Indonesia" three times a year. This journal has published articles in English since 2021. Additionally, there is a cooperation with the "Journal of Basic and Clinical Physiology and Pharmacology", the "Pharmacy Education Journal", and the "Journal of Public Health in Africa".

Moreover, every student who enrols for the thesis courses will be assigned a thesis supervisor who is proactively chosen based on their research interest. The role of the thesis supervisors is to help students to complete their thesis research; they also monitor the progress of thesis in order to ensure the completion of the thesis in the intended amount of time. Each student will have two thesis supervisors, who are experts from related departments, who provide full guidance in carrying out the thesis, starting from finding research idea, writing proposal, conducting research activities, writing the report, and preparing an article for publication. Additionally, as each teacher has their own research framework,

they typically have research groups that function as communities for students to engage in their research, with active participation from more experienced students.

While discussing with the students, the experts find out that the English skills of the staff in university administration are limited and foreign students have problems communicating with them. In these cases, the concerned academic advisor should better support the international students and help them with administrative issues.

Another issue raised by the students during the audit is the fact that students have sometimes problems contacting their teachers. Students complain that teachers are not in their offices and suggest that all teachers should have fixed office hours so that the students know for sure that they can talk to the teacher during this time. This would improve the communication between teachers and students.

All students at UNAIR have access to the digital platform UACC. The students' profiles (student history, study plan, academic transcript and grade point average/GPA, lecturer evaluation, course list) are available via UACC.

There is also medical and social support for students at UNAIR and the Center for Career Development and Entrepreneurship (PPKK) offers a career counselling service. This centre organises the Airlangga Career Fair and Entrepreneur Expo every semester by inviting companies/institutions, so that students may discuss their career interests and submit their job applications directly.

The experts confirm that there are enough resources available to provide individual assistance, advice, and support for all students. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well informed about the services available to them.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 1:

The experts thank UNAIR for explaining that preparing and writing publications in the MoPS programme is currently embedded in courses of "Thesis Proposal" and "Thesis Project". They support the plans to offering an additional specific course on preparing and writing publications to MoPS students. However, the point out that form the curriculum and the module descriptions it is not clear, how MoPS students are prepared for writing and submitting a scientific paper, how much time they spend on this activity, and in what course this work is done. This issue should be solved.

The experts appreciate that the programme coordinators have discussed with the MoPS students about the content of the courses "Pharmaceutical Polymers" and "Advanced Drug

Delivery Systems". In order to make the difference between the two courses more clear, UNAIR has revised the course descriptions in the module handbook. In similar way, the descriptions of the courses "Instrumental Analysis and Electrochemistry A + B" and "Advanced Spectroscopy A + B." have been revised. The experts are satisfied with the provided updated module descriptions.

The experts are glad that UNAIR agrees that it is important that MoPS students get practical experience in different laboratories to help them in finding a suitable topic for their research project. To this end, it would be a good idea to offering an additional practical course to provide students with the relevant training and experience.

The experts agree that in the past three years students' academic mobility has hindered by the COVID-pandemic and they support UNAIR's plans to further increasing students' participation in mobility programmes. To this respect it is also useful to better inform students about the Airlangga Credit Transfer System so that they are aware of the procedure for credit recognition.

The experts appreciate that UNAIR is currently engaged in adjusting students' workload distribution and recalculating the credits in both degree programmes. They expect UNAIR to submit the results in the further course of the procedure.

The experts understand that lecturers are engaged in various activities, which sometimes require them out of the office. In these cases, lecturers can be contacted through multiple channels, including mobile phones, email, and WhatsApp. However, the experts point out that it is important for teachers to keep their office hours and be available for students during that time.

The experts consider criterion 1 to be mostly fulfilled.

2. Exams: System, concept and organisation

Evidence:

- Self-Assessment Report

- Study plan

- Module descriptions

- Academic Handbooks

- Discussions during the audit

Preliminary assessment and analysis of the experts:

The methods of assessment and the weighting, if there is more than one component for each study-unit, are indicated in the respective module description and are announced to the students at the beginning of each semester. The grade for each class takes into account all assessment components. There are few Master's students whose performance fails to reach the minimum standards. They are then required to retake the exams or to repeat the whole course. The passing grade for every course is "B". If a student fails to get a "B", they are given a chance to undergo a supplementary test before the end of semester as remedial. If they are still unable to reach "B", they have to retake the course in the following semester.

Letter Value	Quality Value	Score
A	4	86 – 100
AB	3,5	78 – < 86
B	3	70 – < 78
BC	2,5	62 – < 70
C	2	54 – < 62
D	1	40 – < 54
E	0	< 40

Table 3: Exam Scores; Source: UNAIR Academic Handbook

During the thesis, each Master's student will be accompanied by two advisors and two examiners (the first one should be internal and the second one could be internal or external) to ensure the research process is valid. Thesis proposal has to be approved by the thesis advisors and defended in front of the Thesis Research Proposal Assessment Committee (consisting of thesis advisors and thesis examiners). Master's students who have passed the thesis proposal exam may commence their research project. The results of the research project are presented in the Thesis Research Results Seminar, in the form of an open seminar forum, additionally there is the Thesis Examination, which is conducted by the Thesis Assessment Committee.

Students must attend at least 75% of lectures; if lecture attendance is below than 75%, it could result in students not being allowed to take the final exam/practice assessment, unless they have important reasons for their absence. Accepted reasons are (a) medical condition (proven by a medical letter), (b) assigned in curricular and extra-curricular events out of campus, and (c) have other reasons that are approved by the Dean/Rector.

As part of the graduation requirements, students must complete all courses with a minimum GPA of 3.00, have a thesis score of at least B, have a minimum TOEFL score of 500, and publish a paper in an accredited national or international scientific journal with accepted status.

The course assessment is conducted according to the academic calendar, which is available to all students through UNAIR's webpage. In addition, date and time of each exam are announced by every lecturer at the beginning of each course.

The experts also inspect a sample of examination papers and final theses and are overall satisfied with the general quality of the samples.

In summary, the experts confirm that the different forms of examination used are competence-oriented and are suitable overall for verifying the achievement of the intended learning outcomes as specified in the respective module descriptions. The form of examination is determined individually for each course and published in the respective module description. The forms of examination are based on the main content of the modules and the level is appropriate for the respective degree programme.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 2:

UNAIR does not comment on criterion 2 in its statement.

The experts consider criterion 2 to be fulfilled.

3. Resources

Criterion 3.1 Staff and Development

Evidence:
- Self-Assessment Report
- Staff Handbook
- Study plans
- Module descriptions
- Visitation of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the experts:
At UNAIR, staff members have different academic positions. There are professors, associate professors, assistant professors, and lecturers. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. For example, a full professor needs to hold a PhD

degree. In addition, the responsibilities and tasks of a staff member with respect to teaching, research, and supervision depend on the academic position.

As depicted in the following table, there are 11 academic staff members teaching in the MoDHS programme. This results in a ratio of teachers to active students of 1 : 3. All the teachers have a PhD and are full time lecturers. In addition, several guest lecturers are invited.

Number of Lecturer based on Academic Position			Number of active students	Lecturer -student Ratio
Assistant Professor	Associate Professor	Professor		
5 (45.5%)	3 (27.25%)	3 (27.25%)	Total: 31	1 : 3
Total: 11				

Table 4: MHDS Teaching Staff; Source: SAR UNAIR

As described in the Self-Assessment Report, there are 34 teachers actively involved in the MoPS programme, all of them work full time and have a PhD degree. In addition, there are nine non-permanent staff members. Since there are 123 Master's students, the teacher to student ratio is 1 : 3.6. The details are shown in the following table:

Number of Lecturer based on Academic Position			Number of active students	Lecturer -student Ratio
Assistant Professor	Associate Professor	Professor		
10 (29.41%)	8 (23.53%)	16 (47.06%)	Total: 123	1 : 3.6
Total: 34				

Table 5: MoPS Teaching Staff; Source: SAR UNAIR

The academic staff activity in Indonesia is called Tridharma Perguruan Tinggi, it means that lecturers have the tasks of carrying out teaching, research, and community services in accordance with their fields of expertise and provide guidance to students in order to meet their needs and interests in the education process. Non-permanent lecturers only have to teach in their special area of expertise.

UNAIR conducts research activities to develop science and technology and to improve the teaching and learning processes. To this end, UNAIR has established special institutes, which are called as the Research and Innovation Institute (LPI) and the Research and Community Service Institute (LPPM), to evaluate the research and community service activities conducted by the academic staff members.

As the experts learn during the audit, all teachers have a workload between 12 and 16 credits per semester (one credit equals 170 minutes of activities per week). However, the workload can be distributed differently between the three areas from teacher to teacher.

In order to broaden the students' horizon especially in the field of research and current developments, guest lecturers from both Indonesia and overseas are regularly invited. In addition, practitioners from hospitals and health care institutions are involved in the learning process, not only as lecturers, but also as supervisors in the professional stage. The guest lectures from abroad usually have research collaborations with members of the teaching staff.

The experts discuss with UNAIR's management, how new staff members are recruited. They learn that every year the faculties and departments announce their vacancies to UNAIR's management. Since UNAIR is semi-autonomous, they can decide themselves what staff members to hire. One way to recruit new teachers is to send promising Master's students from UNAIR abroad to complete their PhD and then to hire them as teachers when they complete their own studies. UNAIR also hires graduates from other universities, but it is hard to attract them, because if they are promising at early career stages, their own university will probably already have hired them. All vacancies at UNAIR are announced publicly and the number of open positions is primarily based on the student to teacher ratio in the respective degree programme.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes. The experts observe that the teachers are professionally qualified, and their qualification profiles fit well with the focus of the degree programmes.

Staff Development

UNAIR encourages the training of its academic staff so it has developed a programme for improving the didactic abilities and teaching methods. According to the Self-Assessment Report, the Center of Innovation Studies and Certification (Pusat Inovasi Pembelajaran dan Sertifikasi / PIPS) is responsible for the development of lecturers' skills by offering courses to improve the didactic and professional skills and by assisting members of the teaching staff who are doing a PhD abroad. The academic staff development aims at providing the

opportunities for the academic staff to improve their competences and updating their knowledge in their field of expertise.

Furthermore, Applied Approach (PEKERTI-AA) is a compulsory training for all staff members that focuses on advancing pedagogical knowledge. It is designed particularly for junior faculty members to introduce various teaching methods, learning strategies, preparation of assessments, class management, as well as syllabus and course content development. All teachers at UNAIR are obligated to attend the lecturer certification programme held by the Directorate General of Higher Education (Direktorat Jenderal Pendidikan Tinggi Ditjen, DIKTI). An official teaching certificate is issued after the faculty member has completed the certification process. In addition, the study programmes organise trainings to upgrade lecturers' pedagogical content knowledge on a regular basis.

The departments and faculties facilitate the staff development by enabling them to participate in national and international seminars and conferences. The staff exchange programme is supported by each faculty and funded by UNAIR and the Indonesian Ministry of Research, Technology and Higher Education. Sabbatical leave is also possible, but the length of the stay may vary from one month to one year; there are funds from the Indonesian Ministry of Research, Technology and Higher Education and UNAIR available for such stays.

In addition, the Faculty of Dental Medicine as well as the Faculty of Pharmacy encourage their staff members to join national and international seminars, symposia, and conferences. UNAIR provides rewards for lecturers whose articles are published in highly reputable international journals and provide training and funds for book writing and publishing.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at UNAIR. In addition, there is an academic incentive programme for teachers. The possible financial benefits are based on research performance, academic development, tutoring, awards and teaching evaluations.

Overall, the auditors confirm that UNAIR offers sufficient support mechanisms and opportunities for members of the teaching staff who wish to further develop their professional and teaching skills.

Criterion 3.2 Funds and equipment

Evidence:
- Self-Assessment Report

- Visitation of the facilities

- Discussions during the audit

Preliminary assessment and analysis of the experts:

During the audit, the expert group also visits the laboratories and the classrooms in order to assess the quality of infrastructure and technical equipment. They notice that there are no severe bottlenecks due to missing equipment or a lacking infrastructure.

The visit of the historical building of the Faculty of Dental Medicine – one of the first buildings of UNAIR - (1928) and the dental research center gives the experts a good impression of the current situation and possibilities for dental health sciences. The labs at the Faculty of Dental Medicine are fulltime in operation and are used for educating students as well as performing research activities. The Master's students are very motivated and skilful and appear to appreciate the opportunities for conducting research activities. The researchers are consistently enthusiastic about the students' involvement and their research activities. If there is a lack of certain materials, the deficit can usually be compensated by collaboration with other departments and teachers at UNAIR. The research center also is in its core as historical to define is just a few walking steps away from lecture halls. The equipment is based on the basics you need for dental sciences like microscopical and macroscopical examinations, immunohistochemical procedures, and DNA analysis. However, especially for the focus in ceramics and composites it would be helpful to have the possibility to use an electron-scanning-microscope and CAD/CAM technology, 3D printing possibility or special histo-biochemical analysis. There is also a well-equipped showroom with four treatment chairs to show students patients' treatment with direct live video transmission possibility on big flat screens.

In addition, there is the Publication Center where the also historical (founded in 1967) dental journal is printed.

Overall, the labs in the Faculty of Dental Medicine are of fair quality and the working atmosphere is remarkably open and good. However, there is limited space in the Faculty of Dental Medicine, especially in the research laboratories. The historical building of the Faculty of Dental Medicine cannot be rebuild, but maybe be there are other options how the capacity of the research laboratories could be increased.

The Faculty of Pharmacy is located in a new and modern building with a well-reasoned layout. The building has 10 floors and has been taken into operation in 2019. The building is well designed with two big laboratories on the upper floors with capacity for 60 students each and numerous smaller labs, which are intended for research and master students.

Clean and well-kept common areas, including hallways and restrooms, contribute to a positive atmosphere within the building. Analytical spectroscopic and chromatographic instruments are available on-site, access to very specialized equipment such as HPLC-MS/MS is possible at other departments and the devices be reserved for experiments via an online system. In addition, there is a special computer room for in silico experiments and computer simulations. An adequate number of technical instruments are available; they are connected well and seem to be in use. According to the staff members, a Raman IR-device for micro-analysis is missing.

The second building is the "Institute for Tropical Diseases" (ITD), established in 1995, were the department for natural product chemistry and the biotesting against viruses (Hepatitis C) and Malaria is located. Further on, an HPLC-HRMS device as well as a 400 MHz-NMR are available, both in operation. The research labs are rather small, but fully functional. The building has a nice and friendly atmosphere with a large green court in the middle.

Lecture halls as well as a large number of seminar rooms of various sizes equipped with beamers and other projection equipment are available so that each size of class can be accommodated accordingly. There is also a small library for specialized pharmaceutical literature. Summarizing, the necessary infrastructure for carrying out teaching and research for the MoPS programme exists.

Positive impressions are noted regarding safety measures. Fire extinguishers, clearly mark emergency exits. Safety equipment such as eyewash stations and chemical spill kits in the labs, are readily available. Few laboratories appear to have limited storage space for personal belongings. Adequate storage solutions would contribute to a more organized workspace.

The experts stress that the Faculty of Pharmacy should optimise the usage of highly required devices in the laboratories so that Master's students can use the equipment when they need to. For example, it would be possible to put up lists and timetables for their usage.

The MoDHS programme and the MoPS programme are fully supported by UNAIR and the Faculty of Dental Medicine as well as the Faculty of Pharmacy. Most of UNAIR's funding is covered by the central and regional governments (mostly in the form of lecturers and education staff salaries, research funds and scholarship assignments) and tuition fees. Moreover, UNAIR participates in projects with private companies to supplement its revenues. Currently, UNAIR is actively trying to increase the funding by developing its own businesses. These activities are supported and coordinated by the Academic Business Unit (Satuan Usaha Akademik/SUA). All financial matters at UNAIR are regulated based on Government

Regulation No. 26 of 2015 concerning Financing Mechanisms for State Owned Universities at the national level.

As described in the Self-Assessment Report, UNAIR has three main sources of income:

1. Revenue from the Indonesian government (Ministry of Research, Technology and Higher Education). It represents revenue from the Indonesian government state budget for paying all civil servants (lecturers, professors, and honorary professors). This revenue currently contributes 27% of the total income earned by UNAIR.

2. Revenue from Public Funds. This revenue earned in exchange for goods or services rendered to the community, including student tuition fees and grants from public or private institutions. It currently contributes 52% to UNAIR's total budget.

3. Revenue from Services and Business. UNAIR receives income from work contracts by providing services for institutions, communities, and companies. In addition, UNAIR has several revenue centres that annually provide considerable income, such as UNAIR hospitals, subsidiary companies, and public service centres. This revenue currently contributes 21% of the total income earned by UNAIR.

All revenues are centralized at the university and then distributed to the faculties according to their financial needs. Each department and each faculty present an annual budget plan so that the UNAIR's Finance Office can design a budget for the whole university. Managing the funds of each degree programme is the sole task of the Vice Dean for Resources, Finance and Information Systems.

Airlangga e-Library service is currently used by all programmes offered by UNAIR. This service can also be accessed via WiFi-hotspots and offers access to electronic journals collections, data-based information, and various international e-books.

Distance Learning is also offered at UNAIR, its application is currently under development under the supervision of the Directorate of Information System (DSI) and the Cyber Campus Team Airlangga University (CCTAU). Currently, distance learning applications, e.g. online tutorial, e-quiz, online lecture, etc., have been implemented for some courses at the Faculty of Pharmacy and the Faculty of Dental Medicine.

In summary, the expert group judges the available funds, the technical equipment, and the infrastructure (laboratories, library, seminar rooms etc.) to comply with the requirements for adequately sustaining the degree programmes.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 3:

The experts appreciate that the Faculty of Pharmacy has submitted a budget request for purchasing a Raman IR-device to the university's management. Additionally, the Faculty of Pharmacy will enhance the workspace by providing additional storage space in the laboratories, promoting a more organized and efficient environment for students.

The experts support the plan of the Faculty of Pharmacy of developing an online-platform for coordinating the use of essential laboratory devices. The result should be presented in the further course of the accreditation procedure.

The experts consider criterion 3 to be mostly fulfilled.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Self-Assessment Report

- Module descriptions

- Homepage UNAIR: http://www.unair.ac.id

- Homepage Master Dental Health Science: http://fkg.unair.ac.id/magister/

- Homepage Master Pharmaceutical Science: https://s2if.ff.unair.ac.id/

- Discussions during the audit

Preliminary assessment and analysis of the experts:
The students have access to the module descriptions via the Universitas Airlangga cyber campus system (UACC). However, the experts point out that the module description should also be available via the respective programme's homepage and thus be accessible by all external stakeholders. For example, it would be possible to link the module descriptions with the courses as mentioned in the study plans on the programme's homepage (see criterion 4.3).

After studying the module descriptions, the experts confirm that they include almost all necessary information (course name, course code, students' total workload, awarded ECTS points, teaching language, grading scale, intended learning outcomes, content, course materials, possible prerequisites, name of teacher/teachers in charge, exam methods, and assessment criteria). However, the experts emphasise that the module descriptions of the courses "Thesis" and "Thesis Proposal" should make transparent how the course's final

grade is calculated (see criterion 2). As the experts learn during the audit, in MoPS, the written thesis contributes 66 % and the oral examination 33 % to the final grade of the thesis. In MoDHS, the written thesis contributes 50 % and the oral examination 50 % to the final grade of the thesis. Additionally, it is recommended to include in the grading criteria for the written thesis a clear distinction between the quality of the submitted paper and the minimum qualification necessary to attain an 'A' grade. This information needs to be included in the module descriptions and should additionally made public in the academic handbooks. As pointed out above, some module descriptions such as "Instrumental Analysis and Electrochemistry A and B" do not specifically reflect the content of the modules. These should be amended accordingly.

Moreover, the information in the module descriptions about the students' workload and the awarded ECTS points should be updated after verifying the students' workload (see criterion 1.5).

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report

- Sample Transcript of Records

- Sample Diploma Supplement

Preliminary assessment and analysis of the experts:
The experts confirm that all graduates are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Diploma Supplement contains all required information about the degree programme. UNAIR's Diploma Supplement complies with the model developed by the European Commission, the Council of Europe and UNESCO and it includes a description of the Indonesian education system and a table with statistical data to assess and rank the students' final grade.

Criterion 4.3 Relevant rules

Evidence:

- Self-Assessment Report

- All relevant regulations as published on the university's webpage

Preliminary assessment and analysis of the experts:

The experts confirm that the rights and duties of both UNAIR and the students are clearly defined and binding. All rules and regulations are published on the university's website and the students receive the course material at the beginning of each semester. However, not all relevant information about the degree programmes (module handbook, intended learning outcomes) is accessible via the programme's homepage. This should be corrected.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 4:

The experts confirm that the homepage of both programmes have been updated and now include a link to the respective academic handbooks. This way, external stakeholders have access to the module descriptions and the intended learning outcomes. Additionally, the module descriptions of the thesis and thesis proposal have been updated and now all module descriptions include all necessary information.

The experts consider criterion 4 to be fulfilled.

5. Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The auditors discuss the quality management system at UNAIR with the programme coordinators. They learn that there is a continuous process to improve the quality of the degree programmes. It is carried out through internal and external evaluation. The quality assurance system is implemented at university level by the Quality Assurance Board (BPM), which is supported by the Quality Assurance Team at faculty level (SPM) and the Quality Assurance Unit (GPM) at programme level.

Every year, each degree programme has to analyse and evaluate the quality of the learning and teaching processes through a self-evaluation report, which is submitted to the University's management. In addition to the report, there is an annual internal quality audit (AMI) in order to evaluate whether the general learning objectives have been achieved. Students, supporting staff, lecturers, alumni and employers all participate at the quality audit. The

auditors are particularly qualified lecturers from other faculties. The results of the internal audits are also submitted to UNAIR's management.

Moreover, in both programmes under review, regular meetings are held at the beginning and at the end of the semester to discuss the academic calendar, curricular content, graduation rates, evaluation results etc. The meetings are attended by the Dean, the Vice Deans, the programme coordinators, and other staff members.

External quality assessment of the degree programmes is provided by the Indonesian Accreditation Agency for Education in Health (LAMPT-KES) every five years. This national standard of higher education was designed to encourage educational institutions to improve their performance in providing quality education services. Moreover, the objective of this standard is to support transparency and accountability in the implementation of national education system. Both programmes under review are accredited by accredited by the Indonesian Accreditation Agency for Education in Health (LAMPT-KES) and achieved the highest level "A".

Internal evaluation of the quality of the degree programmes is mainly provided through student and teacher surveys. Students and teachers give their feedback on the courses by filling out the questionnaire online. Giving feedback on the classes is compulsory for the students; otherwise, they cannot access their account on the digital platform UACC and cannot register for the next semester. The course evaluations are held during the final exam week. Questionnaires filled out by lecturers every semester include evaluating the performance of the heads of department, and administrative staff in the department. Students' feedback includes evaluating lectures, advisors, and faculty administration.

The course evaluations are held during the final exam week. A compilation of the students' feedback is sent to the respective lecturers. As the students point out during the discussion with the experts, there is also the possibility to give a direct and informal feedback to the teacher. Additionally, the results of the satisfaction questionnaires are published via UACC.

The highest academic board at UNAIR is the University Senate, which is headed by the Rector and responsible for implementing and supervising all academic processes at UNAIR. The members of the Academic Senate are the Rector, the Vice Rectors, the Deans, and representatives from each faculty. Moreover, there is the Board of Trustees (MWA) on university level, which meets every three months. It has 21 members consisting of: a minister, the rector, six people from the Academic Senate, one lecturer, one education personnel member, 10 people representing the public and a student member, who is usually the Head of the Student Executive Board. The Board of Trustees (MWA) is an organ of UNAIR that sets and deliberates the implementation of general policies.

In addition, there is a Student Board on faculty level, which gives feedback to the Dean on problems in the faculty and how to improve the educational activities. Moreover, every year the faculties organize a hearing forum with students to discuss all issues and possible improvements.

Students confirm during the audit that they are not represented in the faculty's boards and, thus, are not directly involved in the decision-making processes. Although, there are student executive boards in every faculty whose members regularly meet with the programme coordinators to discuss about problems or other issues concerning the degree programmes. The experts are convinced that it would be very useful to have student members in the different boards. For this reason, they recommend that student representatives should be members of the Quality Assurance Team at faculty level (SPM) and the Quality Assurance Unit (GPM) at programme level.

Monitoring and evaluation activities in both degree programmes under review involve lecturers, students, alumni, and employers. Feedback is given by filling out questionnaires, both online and offline. The external stakeholders of the two degree programmes are regularly consulted via tracer studies. In the course of these studies, alumni and the employers gave some valuable input regarding the curriculum, the facilities and the technical equipment of the research laboratories. The satisfaction of the external stakeholders is usually high to very high and the comments are used for improving the degree programmes.

With respect to the different employment areas of MoDHS graduates, it is noteworthy that most of the graduates work as lecturers or teachers in educational institutions, mostly in universities. Moreover, they are employed in hospitals (clinics or work as civil servant in public institutions. The details are shown in the following table:

Employment area	Percentage of Graduates
Education institutional	59%
Private clinic	22%
Civil servant	19%
Total	100%

Table 6: Employment Areas MoDHS Graduates; Source: SAR UNAIR

The Faculty of Pharmacy has conducted a tracer study to find out the work areas of MoPS graduates. The results for 2019-2023 graduates (120 respondents) show that most of them work as lecturers in universities (about 49.2%,). In addition, graduates work in the community (12.5%), for the government (7.5%), in hospitals (6.7%), in the industry (4.2%), and others areas (20.1%). To conduct tracer studies and to keep in touch with the graduates,

UNAIR has the Directorate of Career Development, Entrepreneurship, and Alumni that provides some statistical information on the occupational fields of UNAIR graduates. In general, the job perspectives of Master graduates in Pharmaceutical Sciences as well as in Dental Health Sciences in Indonesia are very promising; the graduates are in high demand.

The experts learn from their discussion with representatives of UNAIR's partners from public institutions and private companies that there are regular workshops with the partners on faculty level, where they discuss the needs and requirements of the employers and possible changes to the degree programmes.

At the Faculty of Pharmacy, there is an advisory board. The Dean, the Vice-Deans, and the programme coordinators meet with the members of the advisory board, who are external stakeholders and alumni from pharmaceutical companies, hospitals and other public institutions, once a year to discuss the needs of the job market and how the study programmes can be further developed.

The Faculty of Dental Medicine also meets regularly with external stakeholders through focus group discussions twice a yearto discuss with them about technological innovations, the requirements of the employments and how this could be considered in the curriculum design. The experts appreciate that the Faculty of Dental Medicine stays in contact with its alumni and the employers. However, no advisory board exists. As the experts consider the input of external stakeholders to be very important for the further development of the degree programmes, they recommend establishing an advisory board at the Faculty of Dental Medicine in order to provide more room for the external stakeholder to give suggestions and to discuss regularly with about the needs of the job market and new developments in the area of dentistry.

The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university. Including students, professionals, and employers in the different boards will help further developing the degree programmes.

In summary, the expert group confirms that the quality management system is suitable to identify weaknesses and to improve the degree programmes. In general, the employers confirm during the discussion with the experts, that they are very satisfied with the qualification profile of the graduates. All stakeholders are involved in the process.

Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 5:

The experts point out that it would be very useful having students as official members not only in the Board of Trustees on university level but also of the Quality Assurance Team at faculty level (SPM) and Quality Assurance Team at programme level (GPM). If there is an

advisory board with external stakeholders on faculty level, UNAIR should make this transparent and provide information about the members.

The experts consider criterion 5 to be mostly fulfilled.

D Additional Documents

Before preparing their final assessment, the panel asks that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

- none

E Comment of the Higher Education Institution (01.11.2023)

UNAIR provides the following statement:

"UNAIR is deeply grateful for the comprehensive expert report provided by ASIIN regarding the accreditation evaluation of our Master of Dental Health Science (MoDHS) and Master of Pharmaceutical Science (MoPS) study programmes. We acknowledge the concerns raised, especially concerning the curriculum, admission requirements, workload, teaching methodology, funding, equipment, module descriptions, and quality management.

We fully acknowledge the concerns raised in these areas and sincerely value the opportunity to address them. Your feedback is instrumental in our continuous efforts to enhance the quality of our programmes. We are committed to making the necessary improvements to ensure the highest standards of education for our students.

Curriculum

The Indonesian Minister of Education and Culture, Research, Technology, and Higher Education issued Decree No. 53/2023 concerning quality assurance in higher education in August 2023. This decree signifies a significant change in the landscape of higher education in Indonesia. Consequently, it is anticipated that all study programmes within Indonesian higher education institutions will require substantial redesign to align with this new regulation.

We want to assure you that all the suggestions provided by ASIIN experts will be thoroughly and thoughtfully considered in the process of redesigning our curriculum, particularly in the MoDHS and MoPS study programmes. Your expertise and recommendations are invaluable in helping us meet the standards set forth by the recent decree.

1. **The experts point out that it is not transparent how MoPS students are prepared for writing and submitting a scientific paper, how much time they spend on this activity, and in what course this work is done. By contrast, the MoDHS programme offers a**

separate course "Scientific Article Writing", for which 6 SKS or 18 ECTS points are awarded. The experts are convinced that it would be a good idea to offering a specific course on preparing and writing the publication in the MoPS programme. This way, it is transparent, how much time students spend on this task and they might be better prepared.

- At present, preparing and writing publications in the MoPS programme is embedded in courses of "thesis proposal" and "thesis project". Students commence their research in the third semester under the guidance of supervisors that is the time when they start the research proposal. During the learning activities, they are obliged to write scientific article while completing their research. Such a workload has been included in the course contract where students are fully aware of this issue. Nevertheless, in line with the suggestions from ASIIN experts, we will consider such a specific course on preparing and writing publications in the curriculum.

2. **During the discussion with the experts, one student points out that the course "Pharmaceutical Polymers" treats other subjects than the course's title suggests and the student are not sure about the output of the courses. The experts suggest that the programme coordinator should talk to the respective teacher and the students if this complaint is justified. If it is corroborated, the necessary steps (adjust the title or the content) should be undertaken. Another issue is the fact that in the MoPS programme, there are the courses "Instrumental Analysis and Electrochemistry A + B" and "Advanced Spectroscopy A + B". The experts point out that the description of the courses' content is almost identical for course "A" and course "B". As the programme coordinators confirm, the actual content of the courses is different and consequently the respective module descriptions need to be corrected and must reflect the course's content adequately.**

- MoPS study programme has discussed with students and respective course coordinators about the ambiguous issue of the course content. The confusion was caused by the course description where there was closely related topics written in those description. The course "Pharmaceutical polymers" provides fundamental concepts

of polymer chemistry, properties, and types of polymers with improved character-istics and functionality for addressing a diverse range of drug delivery challenges in various drug formulations i.e., ophthalmic, nasal, buccal, oral, pulmonary, paren-teral, rectal, vaginal applications. The studies also include improvement, customi-zation, and maximizing the polymer's performances for therapeutic applications of polymers, including controlled drug release, providing site-specific delivery of active pharmaceutical ingredients, improving drug stability, and engineering to exert dis-tinct biological functions. The other subject mentioned by the student is "Advanced Drug Delivery Systems", which clearly states in its module description providing in depth topics on types of drug delivery in the aspects of the manufacturing, formu-lation, and evaluations with relevant biological barriers. These two courses are dif-ferent but closely related one another. Therefore, we have revised the course de-scription in the module handbook to clearly outline the content. Another issue raised was the similarity between the courses "Instrumental Analysis and Electro-chemistry A + B" and "Advanced Spectroscopy A + B." Following discussions with the teaching teams and coordinators, we agreed that they were identical and have revised the module descriptions (attached) accordingly to outline the course ade-quately.

3. **The experts emphasise that it would be useful reducing the number of compulsory theoretical courses in the first two semesters of the MoPS programme and to give students the opportunity to get practical experience in different laboratories so that they can better decide on choosing their research topic.**

- we agreed with the expert suggestions. Practical experience in different laborato-ries are important to provide students with skills that help students select their re-search topics. So far, we actually provide students with specific and relevant train-ings to support their thesis project before they work in the laboratory. However, there is no credit allocated for such trainings. Thus, we will consider such a practical course and allocate adequate number of credits accordingly.

4. **The experts confirm that several opportunities for going abroad exist, that the degrees' structure make stays abroad possible, and that student services offer support and advice for students interested in exchange studies at a foreign university. However, the number of outgoing students is still low. The experts emphasise that students' academic mobility is rather low and should be better promoted by encouraging students to go abroad during their Master's studies, e.g., for preparing their Master's thesis. As almost all of the teachers have international experience, they can use their contacts for sending Master's students for research stays abroad.**

    -   The student mobility programme has been a primary performance indicator for both study programmes and the programme implementation has been as one of our strategic programmes. However, in the past three years the number of student outbound were relatively low due to global pandemic. In MoPS, some students have undertaken researches at partner institutions such as in Taiwan, Osaka University, and interned in the Egyptian herbal industry. Collaboration with partners multinational industries like Daewong Infion Ltd., has been initiated, allowing students to conduct research through a competitive grant scheme. Several initiatives have been carried out to increase student participation in outbound programmes, including:

        a. promotion of student exchange programmes, research grants, and joint research opportunities using platforms like Airlangga Global Engagement, social media, mailing lists, and information blasts to student groups.

        b. Involvement of students in international conference activities to expose them to current knowledge and facilitate opportunities for joint supervision with foreign partners.

        c. Encouraging lecturers and thesis supervisors to apply for international research grants supporting student exchanges or joint research supervision.

        d. Collaboration with partner institutions and proposing research funding for students' theses with the possibility of joint supervision or student exchange.

        e. Initiation of thesis examinations with external examiners to showcase the study programmes' research performance to the external parties.

Regarding financial constraints in academic mobility programmes, both faculties and study programmes are actively developing collaborations with international universities to provide mobility opportunities. The faculty management has provided funding for research collaboration with international universities. Despite these efforts, limited students' participation in the programme is often due to personal circumstances. Programme coordinators continue to encourage students to engage in these collaborative opportunities.

5. **Moreover, it's important to address some students' concerns regarding the transfer of their credits if they go abroad, as they are uncertain if their transferred credits will be sufficient to meet graduation requirements. To alleviate these concerns and ensure transparency, it would be beneficial for the faculty to provide clear information regarding credit transfer policies.**

   - Both study programmes ensure seamless credit transfers for students studying abroad. The policy on credit transfer system for exchange students has been regulated in the Airlangga Credit Transfer System (ACTS). As some students might not be fully aware of such regulation, then we will incorporate these regulations into the study programmes' academic guidelines. Many MoPS students are aware of such regulation and has been facilitated to go abroad for research in Chiayi University, Taiwan and Prince Songkla University, Thailand.

6. **Finally, the experts learn during the audit that the Faculty of Pharmacy would like to establish a double degree programme with the University of Sydney, but currently there are no sufficient funds for this project. This is regrettable, of course, and the experts hope that UNAIR will provide the necessary financial resources, at least in the medium term, so that the programme can be carried out with the university. Such a double degree programme would promote the further internationalisation of UNAIR.**

   - There are several possibilities for degree educational collaboration including double degrees with several universities such as Queen University Belfast (QUB), Temple

University, and Sydney University. UNAIR is committed to supporting this programme, including financial aspect. The real obstacle is not a financial problem, rather the suitability of the curriculum between UNAIR and its counterparts. Currently, the curriculum evaluation is more visible with the curriculum from QUB where we are aiming in near future, so the double degree programme with Sydney University is temporarily postponed.

Admission requirements

1. **The experts discuss with the programme coordinators, why the intake of new students, especially in the MoDHS programme is rather low. They learn that most graduates from Bachelor's programmes in dentistry prefer to work as dentists and only very few students join Master's degree programme with the goal of becoming a researcher or university teacher. To be open for Bachelor's graduates from other areas (e.g. nursing), the Faculty of Dental Medicine accepts these students and offers a bridging programme. The courses in the bridging programme are designed to impart the necessary scientific basis of dentistry so that the respective students can join the MoDHS programme.**

   - Addressing the low number of intake students, both study programmes are actively working on initiatives to enhance the appeal for prospective applicants. The MoDHS programme welcomes Bachelor's graduates from diverse fields and facilitates their entry through a bridging programme. The data from the past three years indicated a notable increase in the number of applicants, showcasing the success of this approach.

2. **During the discussion with the experts, employers suggest offering a part time Master's programme so that students can keep their current job and join a Master's degree programme at the same time. The experts hold the view that this is a useful suggestion and UNAIR might look into this, because this way, the number of applications and students might be increased.**

- The study programmes have discussed with experts from relevant industry which revealed valuable insights. Employers have recommended the introduction of a part-time Master's programme, allowing students to maintain their current employment while pursuing their Master's degree simultaneously. UNAIR is wholeheartedly embracing this practical suggestion. We recognize the potential of this approach in attracting more applications and accommodating the needs of working professionals seeking for further education.

  By adapting and expanding our programmes in response to these insights, we are committed to not only increasing the number of applicants but also providing flexible and accessible avenues for education. We appreciate the input from experts and employers, which plays a pivotal role in shaping the future of our study programmes.

Workload and credits

1. **Since the workload of the students was only estimated by the programme coordinators, the experts expect UNAIR to re-evaluate the calculation of ECTS points and asking the students about their actual workload, especially the time they need for self-studies, for each course. For example, this could be done by including a respective question in the course questionnaires. By correctly displaying students' workload in ECTS points, UNAIR would facilitate academic mobility and better support their graduates if they apply for international programmes. More information on how the ECTS points are calculated correctly can be found in the ECTS Users' Guide.**

- UNAIR remains dedicated to collaborating closely with students to ensure a balanced and manageable workload. We highly value the suggestions provided by the peers concerning workload calculations. Both study programmes are currently engaged in recalculating credit changes in courses and adjusting workload distribution as part of the curriculum redesign process. This is aligning with the most recent regulations outlined in the Minister of Education, Culture, Research, and Technology's Decree No. 53/2023. Chapter 15 of the decree states that '1 (one) credit unit is

equivalent to 45 (forty-five) hours per semester,' regardless of the learning activities, which is a departure from the previous regulation where one course credit unit equalled 170 minutes a week of student activities in one semester. We believe this new regulation offers greater flexibility for students to achieve learning outcomes through various activities. Additionally, the re-calculation of the credit unit system aligns with the ECTS calculation, emphasizing both total hours in a semester and the diverse learning activities undertaken.

Moreover, both study programmes are taking into full account the peers' suggestion regarding students' needs for learning activities in each course. We have implemented a system where students are periodically surveyed about their workload, and adjustment can be based on their feedback. This approach ensures that the workload is tailored to the students' experiences and capacities. The specific questions suggested by the peers will be incorporated into our assessments, further refining the workload adjustments for each course.

2. **Finally, the experts point out that the Faculty of Dental Medicine and the Faculty of Pharmacy should verify the students' total workload. After the workload is verified, the faculties have to make sure that the workload is balanced between the semesters and that the first two semesters are not overloaded. The faculties should work in collaboration with students to achieve this outcome.**

- To maintain the balance distribution between semesters, the faculty will conduct regular evaluations of the workload to guarantee its equitable distribution. This iterative process reflects our commitment to providing an optimal learning experience for our students, acknowledging their diverse needs and creating an environment where they can thrive academically. The first two semesters looked overload in terms of number of offered courses. But in the view of workload, the 2nd year was also in similar case, Students are more focus on their research project with a paper writing, which is relatively seen as balanced workload. Nevertheless, we appreciate the valuable guidance from the experts and are dedicated to implementing these measures effectively.

Didactic and Teaching Methodology

1. **While discussing with the students, the experts find out that the English skills of the staff in university administration are limited and foreign students have problems communicating with them. In these cases, the concerned academic advisor should better support the international students and help them with administrative issues.**

   - To overcome communication barriers with our international students, our study programmes have implemented several initiatives. We have introduced a policy to select academic supervisors with fluent English language skills who are designated in assisting international students. The university also designated "a buddy" initiative where foreign students are assisted by local student buddy in helping them with administration, academic and also cross-cultural platforms. In the near future, we plan to enhance the English language proficiency of our study programme administrators through language training programmes. We will also organize conversation class activities with students who possess proficient English language skills. These efforts are aimed at improving communication and ensuring a smooth learning experience for all our students.

2. **Another issue raised by the students during the audit is the fact that students have sometimes problems contacting their teachers. Students complain that teachers are not in their offices and suggest that all teachers should have fixed office hours so that the students know for sure that they can talk to the teacher during this time. This would improve the communication between teachers and students.**

   - Both study programmes are deeply committed to creating a supportive learning environment where effective teacher-student communication is a top priority. We highly value the feedback from our students and are confident that these measures will significantly enhance the interaction between teachers and students. While there are fixed office hours at UNAIR, we understand that lecturers are engaged in various activities such as teaching, research, and community services, which sometimes require them out of the office. Nevertheless, our lecturers can be contacted

through multiple channels, including mobile phones, email, and WhatsApp. In cases where face-to-face meetings are not possible, discussions with students can be conducted online. We believe that these flexible communication options will facilitate meaningful and continuous interactions between our faculty and students, fostering an enriching academic experience for everyone involved. We also held survey to gather feedback from students regarding the issue in the end of every semester. All potential issues raised by students will be aptly followed up. Such a concern has been raised previously and there has been a measure for lecturers' performance report to ensure the quality of learning process.

Funds and equipment

UNAIR extends our heartfelt gratitude to the expert group for their meticulous evaluation of the laboratories and other facilities of both study programmes during the recent audit. Ensuring a high standard of facilities is paramount in providing a conducive learning environment, and we deeply appreciate the recognition of our ongoing efforts in this regard.

1. **According to the staff members, a Raman IR-device for micro-analysis is missing. Few laboratories appear to have limited storage space for personal belongings. Adequate storage solutions would contribute to a more organized workspace.**

   - Regarding the missing equipment in the MoPS programme, specifically the Raman IR-device for micro-analysis, the Faculty of Pharmacy has allocated a budget plan submitted to the University for the acquisition of this equipment in the upcoming 2023 fiscal year. Additionally, the Faculty of Pharmacy will enhance the workspace by providing additional storage space in the laboratories, promoting a more organized and efficient environment for students.

2. **The experts stress that the Faculty of Pharmacy should optimise the usage of highly required devices in the laboratories so that Master's students can use the equipment when they need to. For example, it would be possible to put up lists and timetables for their usage.**

- In the quest for optimal utilization of highly essential laboratory devices, the Faculty of Pharmacy is developing an online application approach. This approach will allow students to submit requests for the use of tools and instruments while providing them with timely updates on equipment schedules. This streamlined process ensures that students can access the necessary equipment precisely when they need it, enhancing their learning experience.

3. **However, especially for the focus in ceramics and composites it would be helpful to have the possibility to use an electron-scanning-microscope and CAD/CAM technology, 3D printing possibility or special histo-biochemical analysis. There is also a well-equipped showroom with four treatment chairs to show students patients' treatment with direct live video transmission possibility on big flat screens.**

   - The MoDHS programme is committed to enhancing the laboratory facilities. Specifically, the faculty plans to introduce new equipment focusing on ceramics and composites, including an electron-scanning microscope, CAD/CAM technology, and 3D printing. These advanced facilities align with the faculty's vision to implement and develop digital dentistry, ensuring our students have access to cutting-edge resources in their academic pursuits.

Transparency and documentation

1. **The students have access to the module descriptions via the Universitas Airlangga cyber campus system (UACC). However, the experts point out that the module description should also be available via the respective programme's homepage and thus be accessible by all external stakeholders. For example, it would be possible to link the module descriptions with the courses as mentioned in the study plans on the programme's homepage**

   - The module descriptions for both study programmes are readily accessible to all external stakeholders via the programme's homepage, accessible through the academic module handbooks (Link to the website: MoPS and MoDHS). This transparency ensures that external parties, including prospective students and industry

partners, have comprehensive insights into the content and structure of our pro-
grammes.

2. **However, the experts emphasise that the module descriptions of the courses "Thesis" and "Thesis Proposal" should make transparent how the course's final grade is calculated (see criterion 2). As the experts learn during the audit, in MoPS, the written thesis contributes 66 % and the oral examination 33 % to the final grade of the thesis. In MoDHS, the written thesis contributes 50 % and the oral examination 50 % to the final grade of the thesis. Additionally, it is recommended to include in the grading criteria for the written thesis a clear distinction between the quality of the submitted paper and the minimum qualification necessary to attain an 'A' grade. This information needs to be included in the module descriptions and should additionally made public in the academic handbooks. As pointed out above, some module descriptions such as "Instrumental Analysis and Electrochemistry A and B" do not specifically reflect the content of the modules. These should be amended accordingly.**

   - In our continuous efforts to enhance clarity and fairness in the evaluation process, we have recently revised the grading criteria for written theses and thesis proposals in both MoPS and MoDHS programmes. These revisions have been incorporated into the module descriptions for each respective course. (attached) By making these criteria more transparent, we aim to provide students with a clear understanding of the expectations and evaluation standards. This transparency not only ensures fairness in assessments but also empowers students to excel in their academic pursuits with a well-defined framework for success. We are committed to maintaining open communication and transparency in all aspects of our academic programmes, fostering an environment where students can thrive and achieve their full potential.

3. **The experts confirm that the rights and duties of both UNAIR and the students are clearly defined and binding. All rules and regulations are published on the university's website and the students receive the course material at the beginning of each semester. However, not all relevant information about the degree programmes (module**

handbook, intended learning outcomes) is accessible via the programme's homepage. This should be corrected.

- We acknowledge the constructive feedback provided regarding the accessibility of relevant information about our degree programmes, which we understand is crucial for our students' academic success. We have updated our programme homepages to ensure that all relevant information, including module handbooks (Link to the website: MoPS and MoDHS) and intended learning outcomes (Link to the website: MoPS and MoDHS), is accessible to our students.

Quality management: quality assessment and development

1. **Students confirm during the audit that they are not represented in the faculty's boards and, thus, are not directly involved in the decision-making processes. Although, there are student executive boards in every faculty whose members regularly meet with the programme coordinators to discuss about problems or other issues concerning the degree programmes. The experts are convinced that it would be very useful to have student members in the different boards. For this reason, they recommend that student representatives should be members of the Quality Assurance Team at faculty level (SPM) and the Quality Assurance Unit (GPM) at programme level.**

   The experts appreciate that the Faculty of Dental Medicine stays in contact with its alumni and the employers. However, no advisory board exists. As the experts consider the input of external stakeholders to be very important for the further development of the degree programmes, they recommend establishing an advisory board at the Faculty of Dental Medicine in order to provide more room for the external stakeholder to give suggestions and to discuss regularly with about the needs of the job market and new developments in the area of dentistry. The advisory board should consist of a group of professionals, employers, and experts of the relevant fields from outside the university. Including students, professionals, and employers in the different boards will help further developing the degree programmes.

- UNAIR values the active participation of students in shaping the quality of our study programmes. While student representatives are not formal members of the Quality Assurance Team at faculty level (SPM) and Quality Assurance Team at programme level (GPM), their involvement in the quality assurance process is highly regarded. Students' representative has been accommodated in the University Board of Trustee (MWA), where student representatives provide valuable feedback to the University management. Additionally, students play a pivotal role in quality assurance through mandatory student satisfaction surveys conducted each semester.

  In these surveys, students have the opportunity to provide feedback on various aspects, including the performance of lecturers, thesis supervisors, and academic counsellors, as well as administrative staff, study programme coordinators, and their satisfaction with the facilities and resources. We deeply appreciate these insights, as they contribute significantly to the continuous improvement of our study programmes.

  We acknowledge the expert recommendation to include a student representative in the quality assurance team, a suggestion that we find invaluable for enhancing the continuous improvement process of our study programmes. At the faculty level, UNAIR has established the Student Legislative Board, a student organization that gathers student aspirations and presents them in the Hearing Forum. This forum, attended by student representatives, faculty members, and study programme management, facilitates direct student involvement in the decision-making process.

  Moreover, at the faculty level, an advisory board comprising external stakeholders and alumni from relevant fields convenes annually. This platform serves as an opportunity to discuss the needs of the job market and explore ways to further develop our study programmes. The active participation of students, along with the insights from external stakeholders and alumni, ensures a holistic and comprehensive approach to the ongoing enhancement of our study programmes.

F Summary: Expert recommendations (10.11.2023)

Taking into account the additional information and the comments given by UNAIR, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma Dental Health Science	With requirements for one year	-	30.09.2029
Ma Pharmaceutical Sciences	With requirements for one year	-	30.09.2029

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload for each course and make sure that the awarded ECTS points comply with the students' total workload.

For Ma Pharmaceutical Sciences

A 2. (ASIIN 1.3) Make transparent how students are prepared for writing and submitting a scientific paper, how much time they spend on this activity, and in what course this work is done.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to further encourage students to spend some time abroad.

E 2. (ASIIN 1.4) It is recommended to conduct the admission interviews by more than one person.

E 3. (ASIIN 5) It is recommended to make student representatives members of the boards at the Faculty of Dental Medicine and the Faculty of Pharmacy and to directly involve them in the decision making processes for further developing the degree programmes.

For Ma Dental Health Science

E 4.   (ASIIN 5) It is recommended to establish an advisory board with external stakeholders at the Faculty of Dental Medicine.

For Ma Pharmaceutical Sciences

E 5.   (ASIIN 1.3) It is recommended to reduce the number of compulsory theoretical courses in the first two semesters of the MoPS programme and to give students the opportunity to get practical experience in different laboratories so that they can better decide on choosing their research topic.

E 6.   (ASIIN 3.2) It is recommended to optimise the usage of highly required devices in the laboratories so that students can use the equipment when they need to.

G Comment of the Technical Committees (22.11.2023)

Technical Committee 09 – Chemistry, Pharmacy (22.11.2023)

Assessment and analysis for the award of the ASIIN seal:

The TC sees that, the expert group proposes two requirements. Firstly, it is not transparent how the MoPS students are prepared for writing and submitting a scientific paper, how much time they spend on this activity and in which course this work is carried out. Secondly, it is necessary to review the student workload for each course and ensure that the ECTS credits awarded correspond to the total student workload. In addition, six recommendations are proposed. After a brief discussion, the Technical Committee approves the proposals.

The Technical Committee 09 – Chemistry, Pharmacy recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma Dental Health Science	With requirements for one year	-	30.09.2029
Ma Pharmaceutical Sciences	With requirements for one year	-	30.09.2029

Technical Committee 14 – Medicine (17.11.2023)

Assessment and analysis for the award of the ASIIN seal:

The TC discusses the procedures and agrees with the experts' assessment.

The Technical Committee 14 – Medicine recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma Dental Health Science	With requirements for one year	-	30.09.2029
Ma Pharmaceutical Sciences	With requirements for one year	-	30.09.2029

H Decision of the Accreditation Commission (08.12.2023)

Assessment and analysis for the award of the subject-specific ASIIN seal:

The Accreditation Commission discusses the procedure and decides to follow the assessment of the experts and the Technical Committees without changing the proposed requirements and recommendations.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma Dental Health Science	With requirements for one year	-	30.09.2029
Ma Pharmaceutical Sciences	With requirements for one year	-	30.09.2029

Requirements

For all degree programmes

A 1.   (ASIIN 1.5) Verify the students' total workload for each course and make sure that the awarded ECTS points comply with the students' total workload.

For Ma Pharmaceutical Sciences

A 2.   (ASIIN 1.3) Make transparent how students are prepared for writing and submitting a scientific paper, how much time they spend on this activity, and in what course this work is done.

Recommendations

For all degree programmes

E 1.   (ASIIN 1.3) It is recommended to further encourage students to spend some time abroad.

E 2.   (ASIIN 1.4) It is recommended to conduct the admission interviews by more than one person.

E 3.   (ASIIN 5) It is recommended to make student representatives members of the boards at the Faculty of Dental Medicine and the Faculty of Pharmacy and to directly involve them in the decision making processes for further developing the degree programmes.

For Ma Dental Health Science

E 4.   (ASIIN 5) It is recommended to establish an advisory board with external stakeholders at the Faculty of Dental Medicine.

For Ma Pharmaceutical Sciences

E 5.   (ASIIN 1.3) It is recommended to reduce the number of compulsory theoretical courses in the first two semesters of the MoPS programme and to give students the opportunity to get practical experience in different laboratories so that they can better decide on choosing their research topic.

E 6.   (ASIIN 3.2) It is recommended to optimise the usage of highly required devices in the laboratories so that students can use the equipment when they need to.

Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the <u>Master's degree programme Dental Health Science</u>:

General Skills	
LO 1	Be able to develop logical, critical, systematic, and creative thinking through scientific research, design creation or artworks in the field of dental health science and technology that pays attention to and applies humanities values in their field of expertise;
LO 2	Be able to undertake academic validation or studies in the field of dental health science and technology issues in relevant groups of communities or industries through the development of their knowledge and their expertise by arranging the scientific conception and study results referring to the scientific rules, procedures, and ethics in the form of a thesis or other equivalents forms, as well as papers that have been published on international journals.
LO 3	Be able to manage, develop and maintain professional networks with their colleagues, peers within the institutions and wider research community;
LO 4	Be able to make decisions in the context of solving problems in the development of dental health science and technology that in accordance to humanities values based on the analytical or experimental studies of data and information;
Knowledge	
LO 5	Be able to master the relevant knowledge and theoretical concepts about the development of dental health science and technology in the fields of oral biology, dental biomaterials, and community dentistry;
Specific skills	
LO 6	Be able to conduct innovative and scientific inter-disciplinary research that useful for science and technology development in oral biology, dental biomaterials, and community dentistry.

The following **curriculum** is presented:

No	Courses		Lectures	
	Code	Name of the Courses	Credit	ECTS
-1	-2	-3	-4	-5
1st Semester				
Compulsory				
1	PHG601	Science Philosophy	2	6
2	PNG687	Research Methodology and Statistics	4	12
3	BIO603	Advanced oral biology	2	6
4	KGM603	Advanced Biomaterial Science	2	6
5	KGH602	Advanced Community Dental Health Sciences	2	6
6	PNG686	Referencing Literature	2	6
Sub-amount of credits of 1st semester			**14**	**42**
2nd Semester				
Compulsory				
	PNG698	Thesis Proposal	4	12
Elective (8 of 36 credits)				
Oral Biology				
1	BIO605	Molecular Biology	2	6
2	BIO606	Immunobiology	2	6
3	BIO607	Pathobiology of The Oral Cavity	2	6
4	BIO608	Forensic Dentistry	2	6
Biomaterial				
5	KGM605	Biological Testing of Biomaterial	2	6
6	KGM606	Tissue Engineering	2	6
7	KGM607	Tissue Culture Product	2	6
8	KGM608	Stem Cell	2	6
Dental Public Health Science				
9	KMP611	Environmental Health and Preventive Dentistry	2	6
10	KMP612	Behavior Management and Promotion of Health	2	6
11	KMP613	Health Service Management and Health Economics	2	6
12	KMP614	Epidemiology and Surveillance of Advanced Biostatistics	2	6
Sub-amount of credits of 2nd semester			**12**	**36**

3rd Semester				
Compulsory				
1	PNG761	Scientific Article Writing	6	18
Sub-amount of credits of 3rd semester			**6**	**18**
4th Semester				
Compulsory				
1	PNG769	Thesis	8	24
Sub-amount of credits of 4th semester			**8**	**24**
TOTAL			**40**	**120**

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the <u>Master's degree programme Pharmaceutical Sciences</u>:

A. Attitude

LO1: Able to realize excellence based on religious morals (excellence with morality), able to work together, and show a responsible attitude to work in their field of expertise independently.

LO2: Able to internalize the spirit of independence, struggle, and entrepreneurship.

B. General Skills

LO3: Able to develop and build logical-critical-systematic-creative thinking and scientific conceptions through scientific research, design creation, or artworks of science and technology that pays attention to and applies humanities values through an interdisciplinary or multidisciplinary approach in the form of a thesis or other equivalent forms.

LO4: Able to develop a pharmaceutical professional performance with analytical acumen in solving pharmaceutical problems and managing research in the pharmaceutical field related to national and global systems and policies, both inter and inter-disciplinary approaches.

LO5: Able to access and review information through an Information and Communication Technology (ICT) system, decide on a specific subject of study, maintain the feasibility of implementing research designs, conduct research, analyze data, conclude research results comprehensively, and create strategic issues based on the study that reflect the latest updates in the field of pharmaceutical sciences, and communicate them in the media and scientific forums at the national and international level through an interdisciplinary or multidisciplinary approach in the form of a thesis or other equivalent forms.

LO6: Able to make decisions in the context of solving problems related to science and technology development based on analytical or experimental studies through collaboration with colleagues, colleagues in institutions and research communities at both national and international levels and utilizing research results for the benefit of the user and other communities.

C. Special Skills

LO7: Able to analyze natural materials to obtain active ingredients and/or pharmaceutical excipients with due observance of nature conservation.

LO8: Able to carry out drug designs through the synthesis of bioactive compounds based on the structure-activity relationship.

LO9: Able to carry out molecular manipulation of substances and develop formulations and manufacturing of pharmaceutical preparations with active pharmaceutical ingredients derived from natural products and synthetic compounds through the manufacture of polymorphs, nanoparticles, solid dispersions.

LO10: Able to develop pharmaceutical management systems and policies related to the referral health care system and the role and function of pharmacists as an integral part of the health care team in order to improve community welfare.

LO11: Able to develop systems for evaluating the bioavailability of drugs in the body, pharmaceutical products circulation permits, and their in-vitro and in-vivo evaluations with specific delivery systems with appropriate analytical methods.

LO12: Able to develop analytical methods to ensure the quality of drugs, cosmetics, foods, and beverages.

D. Knowledge

LO13: Able to design drug development both from natural products and/or synthetic compounds by considering the biological mimicry system.

LO14: Able to build drug management systems from active pharmaceutical ingredients to finished products that are ready for therapeutic uses.

LO15: Able to plan and organize concepts and procedures for quality assurance and recommendations on pharmaceutical products, which include drugs, cosmetics, foods, and beverages as products and therapeutic goods.

The following curriculum is presented:

Curriculum Structure of Study Program (Mandatory Courses)

No.	Courses		Credit Unit (sks)	ECTS
	Code	Name		
(1)	(2)	(3)	(5)	
Compulsory Courses for MSP-PS (all research interests)				
1	PNF697	Research Methodology	2	6
2	PHF601	Philosophy of Science	2	6
3	MAS601	Statistics	2	6
Sub Total Semester Credit Unit			**6**	**18**

Curriculum Structure of Study Program (Field of Interest: Pharmaceutical Analysis)

No. (1)	Courses Code (2)	Courses Name (3)	Credit Unit (sks) (5)	ECTS
Semester 1			
Compulsory Courses for MSP-PS (all research interests)			**6**	**18**
Compulsory Courses for Pharmaceutical Analysis				
1	KIA616	Instrumental Analysis and Electrochemistry A	2	6
2	KIA622	Instrumental Analysis and Electrochemistry B	1	3
3	KIA618	Advanced Spectroscopy A	2	6
4	KIA619	Advanced Spectroscopy B	1	3
5	KIA617	Advanced Chromatography	2	6
6	NUF601	Functional Foods	2	6
Sub Total Semester Credit Unit Semester 1			**16**	**48**
Semester 2			
7	KIA635	Bioanalysis	2	6
8	KIA636	Food Quality and Safety	2	6
9	KIA637	Advanced Clinical Chemistry	2	6
10	KIA610	Microbiological Analysis	2	6
11	KIA638	Analytical Methods Development and Validation	2	6
12	PNF698	Thesis Proposal	2	6
Supporting Thesis Courses (optional) minimum 4 SCU				
13	KIA612	Doping Analysis (2 SCU, 3.2 ECTS)	4	12
14	KIA613	Analysis of Chemical Contaminants (2 SCU, 3.2 ECTS)		
15	KIA615	Environmental Impact Analysis (2 SCU, 3.2 ECTS)		
16	KIA609	Forensic Analysis (2 SCU, 3.2 ECTS)		
17	KIA614	Genomic and Proteomic Analysis (2 SCU, 3.2 ECTS)		
Sub Total Semester Credit Unit Semester 2			**16**	**48**
Semester 3 & 4 (open semester)			
18	PNF699	Thesis	6	18
Sub Total Semester Credit Unit Semester 3 & 4			**6**	**18**
Total Semester Credit Unit			**38**	**114**

Curriculum Structure of Study Program (Field of Interest: Natural Product Chemistry)

No. (1)	Code (2)	Courses Name (3)	Credit Unit (sks) (5)	ECTS
Semester 1			
		Compulsory Courses for MSP-PS (all research interests)	6	18
		Compulsory Courses for Natural Product Chemistry		
1	KIA616	Instrumental Analysis and Electrochemistry A	2	6
2	KIA618	Advanced Spectroscopy A	2	6
3	KIA617	Advanced Chromatography	2	6
4	BIS604	Molecular Biology	2	6
5	BIT625	Advanced Pharmaceutical Biotechnology	2	6
Sub Total Semester Credit Unit Semester 1			**16**	**48**
Semester 2				
6	FAB601	Advanced Phytochemistry	2	6
7	FAB605	Phytotherapy	2	6
8	FAB604	Phytopharmaceuticals	2	6
9	BIT616	Genetic Engineering	2	6
10	KIO609	Organic Synthesis	2	6
11	KIM601	Advanced Medicinal Chemistry	2	6
12	PNF698	Thesis Proposal	2	6
Supporting Thesis Courses (optional) minimum 4 SCU				
13	FAB602	Bioactivity of Natural Products (2 SCU, 3.2 ECTS)	4	12
14	BIT611	Mammalian Cell Culture (2 SCU, 3.2 ECTS)		
15	KIA607	Natural Products Analysis (2 SCU, 3.2 ECTS)		
16	FAT606	Bioethics and Clinical Trials (2 SCU, 3.2 ECTS)		
17	FAT604	Advanced Biopharmaceutics (2 SCU, 3.2 ECTS)		
Sub Total Semester Credit Unit Semester 2			**18**	**48**
Semester 3 & 4 (open semester)				
18	PNF699	Thesis	6	18
Sub Total Semester Credit Unit 3 & 4			**6**	**18**
Total Semester Credit Unit			**40**	**120**

Curriculum Structure of Study Program (Field of Interest: Biomedical Pharmacy)

No. (1)	Code (2)	Courses Name (3)	Credit Unit (sks) (5)	ECTS
		Semester 1		
		Compulsory Courses for MSP-PS (all research interests)	6	18
		Compulsory Courses for Biomedical Pharmacy		
1	BIS604	Molecular Biology	2	6
2	FAT602	Molecular Pharmacology	2	6
3	FAF604	Advanced Biopharmaceutics	2	6
4	FAK603	Advanced Pharmacokinetics	2	6
5	KIM606	Drug Development	2	6
Sub Total Semester Credit Unit Semester 1			**16**	**48**
		Semester 2		
6	FAT603	Pharmacometrics	2	6
7	FAT621	Advanced Pharmacotherapy	2	6
8	FAM602	Pharmacogenomics and Proteomics	2	6
9	KIM602	Structure - Activity Relationship	2	6
10	FAF635	Drug Delivery and Targeting	2	6
11	PNF698	Thesis Proposal	2	6
Supporting Thesis Courses (optional) minimum 4 SCU				
12	FAT606	Bioethics and Clinical Trial (2 SCU, 3.2 ECTS)	4	12
13	KIM605	Drug Interactions (2 SCU, 3.2 ECTS)		
14	FAM609	Drug Surveillance (2 SCU, 3.2 ECTS)		
15	BIK613	Molecular Biochemistry (2 SCU, 3.2 ECTS)		
16	FAF603	Biopharmaceutical Products (2 SCU, 3.2 ECTS)		
17	FAK605	Clinical Pharmacokinetics (2 SCU, 3.2 ECTS)		
18	FAK601	Population Pharmacokinetics (2 SCU, 3.2 ECTS)		
19	KIA621	Advanced Clinical Chemistry (2 SCU, 3.2 ECTS)		
20	KIA635	Bioanalysis (2 SCU, 3.2 ECTS)		
21	BIK621	Neurobiology (2 SCU, 3.2 ECTS)		
22	BII615	Molecular Immunology (2 SCU, 3.2 ECTS)		
Sub Total Semester Credit Unit Semester 2			**16**	**48**
		Semester 3 and 4		
23	PNF699	Thesis	6	18
Sub Total Semester Credit Unit Semester 3 and 4			**6**	**18**
Total Semester Credit Unit			**38**	**114**

Curriculum Structure of Study Program (Field of Interest: Pharmacy Policy & Management)

No.	Code	Courses Name	Credit Unit (sks)	ECTS
(1)	(2)	(3)	(5)	
Semester 1				
Compulsory Courses for MSP-PS (all research interests)			**6**	**18**
Compulsory Courses for Pharmacy Policy & Management				
1	FAM604	Pharmaceutical Services Management	2	6
2	MNP608	Pharmaceutical Marketing & Consumer Behaviour	2	6
3	FAM604	Pharmaceutical Logistics Management	2	6
4	HKD607	Pharmacy Law and Ethics	2	6
5	FAM606	Pharmacoepidemiology	2	6
Sub Total Semester Credit Unit Semester 1			**16**	**48**
Semester 2				
6	KMA613	Policy Analyses	2	6
7	PSI624	Organizational Behaviour	2	6
8	PSI624	Health Management	2	6
9	SOK637	Professional Communication	2	6
10	FAM603	Pharmacoeconomics	2	6
11	PNF698	Thesis Proposal	2	6
Supporting Thesis Courses (optional) minimum 4 SCU				
12	FAT621	Advanced Pharmacotherapy (2 SCU, 3.2 ECTS)	4	12
13	MNS603	Health Insurance (2 SCU, 3.2 ECTS)		
14	FAM601	Pharmaceutical Information Technology (2 SCU, 3.2 ECTS)		
15	PSC614	Health Behaviour (2 SCU, 3.2 ECTS)		
Sub Total Semester Credit Unit Semester 2			**16**	**48**
Semester 3 & 4 (Open Semester)				
16	PNF699	Thesis	6	18
Sub Total Semester Credit Unit Semester 3 & 4			**6**	**18**
Total Semester Credit Unit			**38**	**114**

Curriculum Structure of Study Program (Field of Interest: Cosmetics)

No. (1)	Code (2)	Name (3)	Credit Unit (sks) (5)	ECTS
		Courses		
		Semester 1		
Compulsory Courses for MSP-PS (all research interests)			**6**	**18**
Compulsory Courses for Cosmetics				
1	FAF642	Skin & Cosmetics	2	6
2	FAF607	Cosmetics Formulation	2	6
3	FAF630	Cosmetics Safety	2	6
4	FAF640	Evaluation & Regulation of Cosmetics	4	6
5	FAF643	Cosmetics Labelling and Packaging	2	6
Sub Total Semester Credit Unit Semester 1			**18**	**48**
		Semester 2		
6	FAF606	Delivery Systems for Cosmetics	4	12
7	FAF632	Anti-aging Preparations	3	9
8	FAF633	Skin Whitening Preparations	3	9
9	PNF698	Thesis Proposal	2	6
Supporting Thesis Courses (optional) minimum 4 SCU				
10	FAF611	Aromatherapy (2 SCU, 3.2 ECTS)	4	12
11	FAF612	Make-up Cosmetics (2 SCU, 3.2 ECTS)		
12	FAF613	Oral Hygiene Cosmetics (2 SCU, 3.2 ECTS)		
13	FAF614	Haircare Cosmetics (2 SCU, 3.2 ECTS)		
14	KIA610	Microbiological Analysis (2 SCU, 3.2 ECTS)		
Sub Total Semester Credit Unit Semester 2			**16**	**48**
		Semester 3 & 4 (Open Semester)		
15	PNF699	Thesis	6	18
Sub Total Semester Credit Unit Semester 3 & 4			**6**	**18**
Total Semester Credit Unit			**38**	**114**

Curriculum Structure of Study Program (Field of Interest: Drug Development)

No. (1)	Code (2)	Courses Name (3)	Credit Unit (sks) (5)	ECTS
Semester 1				
Compulsory Courses for MSP-PS (all research interests)			6	18
Compulsory Courses for Drug Development				
1	KIA616	Instrumental Analyss and Electrochemistry A	2	6
2	KIA618	Advanced Spectroscopy A	2	6
3	BIS604	Molecular Biology	2	6
4	BIK602	Advanced Biochemistry	2	6
Sub Total Semester Credit Unit Semester 1			**14**	**42**
Semester 2				
5	KIO609	Organic Synthesis	2	6
6	KIO608	Physical Organic Chemistry	2	6
7	FAT602	Molecular Pharmacology	2	6
8	FAT603	Pharmacometrics	2	6
9	KIM602	Structure-Actrivity Relationship	2	6
10	KIM603	Drug Designs	2	6
11	PNF698	Thesis Proposal	2	6
Supporting Thesis Courses (optional) minimum 4 SCU				
12	KIM601	Advanced Medicinal Chemistry (2 SCU, 3.2 ECTS)	4	12
13	BIT633	Proteomics, Genomics & Drug Development (2 SCU, 3.2 ECTS)		
14	KIM604	Enzyme & Drug Development (2 SCU, 3.2 ECTS)		
15	BIT609	Microbiology and Microbe Biotechnology (2 SCU, 3.2 ECTS)		
16	BIT605	Biotransformation and Drug Development (2 SCU, 3.2 ECTS)		
Sub Total Semester Credit Unit Semester 2			**18**	**48**
Semester 3 & 4 (Open Semester)				
17	PNF699	Thesis	6	18
Sub Total Semester Credit Unit Semester 3 & 4			**6**	**18**
Total Semester Credit Unit			**38**	**114**

Curriculum Structure of Study Program (Field of Interest: Drug Delivery Systems)

No.	Kode	Name	Credit Unit (sks)	ECTS
(1)	(2)	(3)	(5)	
		Semester 1		
		Compulsory Courses for MSP-PS (all research interests)	6	18
		Compulsory Courses for Drug Delivery Systems		
1	KIA616	Instrumental Analysis and Electrochemistry A	2	6
2	BIS604	Molecular Biology	2	6
3	FAT602	Molecular Pharmacology	2	6
4	FAF604	Advanced Biopharmaceutics	2	6
5	FAF601	Advanced Physical Pharmacy	2	6
		Sub Total Semester Credit Unit Semester 1	16	48
		Semester 2		
6	FAF619	Nanoparticle Technology	2	6
7	FAF635	Drug Delivery and Targeting	2	6
8	FAF636	Advanced Drug Delivery System	2	6
9	FAF620	Pharmaceutical Polymer	2	6
10	FAF603	Biopharmaceutical Products	2	6
11	PNF698	Thesis Proposal	2	6
		Supporting Thesis Courses (optional) minimum 4 SCU		
12	FAF623	Transdermal Delivery System (2 SCU, 3.2 ECTS)	4	12
13	FAF624	Inhalation Delivery System (2 SCU, 3.2 ECTS)		
14	FAF641	Solid Preparation Formulation Plan (2 SCU, 3.2 ECTS)		
		Sub Total Semester Credit Unit Semester 2	16	48
		Semester 3 and 4		
15	PNF699	Thesis	6	12
		Sub Total Semester Credit Unit Semester 3-4	6	12
		Total Semester Credit Unit	38	114