ASIIN Certification Report

Programme
Diploma Programme of Chemical Analysis

Provided by
Universitas Islam Indonesia, Yogyakarta

Version: 09 December 2021

Table of Content

A About the Certification Process

Title of the programme	**Previous certification**
Diploma Programme of Chemical Analysis	-
Date of the contract: 15.10.2020 **Submission of the final version of the self-assessment report:** 05.03.2021 **Date of the audit:** 28.06. – 01.07.2021 **online**	
Peer panel: Prof. Dr. Gernot Friedrichs, University of Kiel Prof. Dr. Gabriele Hornung, Technical University Kaiserslautern Prof. Dr. Michael Keusgen, University of Marburg Prof. Dr. Klaus-Uwe Koch, Westphalian University of Applied Sciences Dr. Marc Vandemeulebroecke, Novartis Pharma AG, Basel Azalea Rahma Septianti, Universitas Airlangga, student	
Representative of the ASIIN headquarter: Rainer Arnold	
Responsible decision-making committee: Certification committee	
Criteria used: Standards for the Certification of (Further) Education and Training for courses and modules related to Computer Sciences, Technology, Natural Sciences and Business Economics as of 27.07.11. European Standards and Guidelines as of 2009 (3rd edition).	

In order to facilitate the legibility of this document, only masculine noun forms will be used hereinafter. Any gender-specific terms used in this document apply to both women and men.

B Characteristics of the Programme

a) Name of the programme	b) Degree awarded upon conclusion	c) Corresponding level of the European Qualifications Framework	d) Mode of Study	e) Duration & Credit Points	f) First time of offer & Intake rhythm	g) Number of students per intake	h) Fees
Diploma Programme Chemical Analysis	Ahli Madya Sains (A.Md.Si.), Diploma in Applied Science	5	Full time	6 Semester 110 CSU / 154 ECTS	2003	150	9 Mill. Rupiah (520€) per semester

For the Diploma Programme Chemical Analysis (DPCA) Universitas Islam Indonesia UII has presented the following profile in the Self-Assessment Report:

Vision:

The realization of a DPCA, one guided by the concepts of rahmatan lil'alamin, by 2030.

Mission:

(1) Improve the quality of education in chemical analysis to generate graduates who are qualified and able to compete globally.

(2) Improve the quality of patent-oriented applied research.

(3) Apply competency in chemistry for community service projects and Da'wah Islamiyah.

Objectives:

1. Produce competent graduates with moral values.

2. Become a reference for the development of science and contribute to problem solving in the field of chemical analysis.

3. Become an industry partner in Indonesia for applying research in the field of chemical analysis.

4. Create a network of mutually beneficial cooperative partners at the national and international levels.

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Diploma Programme Chemical Analysis:

Criteria	Code	Competency	Description
ATTITUDE: ISLAMIC	PLO1	Islamic Ethics and Behavior	Able to express his or her attitude based on universal Islamic law and ethics or his or her personal beliefs
	PLO2	Inclusive Mindset	Able to demonstrate an inclusive worldview, one that engages global society yet expresses one's own Islamic and Indonesian identity
KNOWLEDGE: INTEGRATIVE	PLO3	Analytical Thinking	Able to express basic concepts of chemistry, chemical analysis, and operation and maintenance of chemical instruments that can be applied in their work
GENERAL SKILLS:	PLO4	Responsibility	Able to lead in his or her working environment and be an exemplar for society

Criteria	Code	Competency	Description
PROPHETIC LEADERSHIP	PLO5	Exemplary Behavior	Able to contribute to solving problems in their work
	PLO6	Social Awareness	Able to accomplish their work, analyze data, and communicate analytical results effectively with qualified performance
SPECIFIC SKILLS: TRANSFORMATIVE	PLO7	Professional	Able to choose and perform the suitable methods of chemical analysis and operate chemical instruments by applying the principles of chemistry, occupational safety, and health
	PLO8	Quality Performance	Able to implement the standardized laboratory management system responsibly under supervision
	PLO9		Able to carry out the validation or verification of chemical analysis methods

The following curriculum is presented:

The 1st semester

Number	Code	Course	Credits	Methods	Prerequisite	Module
1	UNI500	Islamic Education	2	Theory		A
2	UNI502	State Philosophy	2	Theory		A
3	UNI505	English for Discipline	2	Theory		A
4	UNI506	Bahasa Indonesia for Academic Communication	1	Theory		A
5	VKT111	Success Skills	2	Theory, Practice		C
6	VKD110	General Chemistry	3	Theory		B
7	VKD107	Health and Safety	2	Theory, Practice		B
8	VKD108	Standardization	2	Theory		B
9	VKD109	Laboratory Technique Lab Work	2	Practice		B
10	VKT112	Industrial Chemical Lab Work	2	Practice		C
Total			**20**			

The 2nd semester

Number	Code	Course	Credits	Methods	Prerequisite	Module
1	UNI501	Islam for Scholars	3	Theory		A
2	VKT219	Statistics for Chemistry	2	Theory, Practice		C
3	VKD213	Analytical Chemistry	3	Theory		B
4	VKD215	Organic Chemistry	2	Theory		B
5	VKD217	Inorganic Chemistry	2	Theory		B
6	VKD214	Analytical Chemistry Lab Work	4	Practice		B
7	VKD216	Organic Chemistry Lab Work	2	Practice		B
8	VKD217	Inorganic Chemistry Lab Work	2	Practice		B
Total			**20**			

The 3rd semester

Number	Code	Course	Credits	Methods	Prerequisite	Module
1	UNI503	Civic Education	2	Theory		A
2	VKD320	Physical Chemistry	2	Theory	General Chemistry	B
3	VKD322	Biochemistry	2	Theory, Practice	Organic Chemistry	B
4	VKT326	Chemical Separation	2	Theory		C
5	VKD323	Spectrometry	2	Theory	Analytical Chemistry	B
6	VKT325	Electrochemical Analysis	2	Theory, Practice	General Chemistry	C
7	VKD321	Physicochemical Analysis Lab Work	2	Practice	Laboratory Technique Lab Work	B
8	VKD324	Spectrometry Lab Work	4	Practice	Laboratory Technique Lab Work	B
9	VKT327	Sampling Technique Lab Work	2	Practice		C
		Elective courses	4			
Total			**24**			

The 4th semester

Number	Code	Course	Credits	Methods	Prerequisite	Module
1	VKT433	Ethics and Professional Communication	2	Theory, Practice		C
2	VKD428	Chromatography	2	Theory	Analytical Chemistry	B
3	VKD430	Microbiology Analysis	2	Theory, Practice		B
4	VKT431	Environmental Chemistry	2	Theory		C
5	VKT432	Laboratory Management	2	Theory, Practice		C
6	VKD429	Chromatography Lab Work	4	Practice	Laboratory Technique Lab Work	B
7	VKT434	Food and Agricultural Product Analysis Lab Work	2	Practice	Analytical Chemistry	C
8	VKT435	Calibration of Instrument Lab Work	2	Practice	Laboratory Technique Lab Work	C
9	VKT433	Ethics and Professional Communication	2	Theory, Practice		C
		Elective courses	4			
Total			**22**			

The 5th semester

Number	Code	Course	Credits	Methods	Prerequisite	Module
1	UNI504	Sharia Entrepreneurship	2	Theory		A
2	VKT536	Electronic Instrumentation and Chemical Sensors	2	Theory	Electrochemical Analysis	C
3	VKT537	Validation Method Technique	2	Theory, Practice	Standardization	C
4	VKT538	Quality Control and Assurance	2	Theory, Practice	Standardization	C
5	VKT539	Water, Soil, and Air Analysis Lab Work	2	Practice	Laboratory Technique Lab Work	C
6	VKT540	Food and Drug Analysis Lab Work	2	Practice	Laboratory Technique Lab Work	C
7	VKT541	Professional Training	2			C
		Elective courses	4			
Total			**18**			

The 6th semester

Number	Code	Course	Credits	Methods	Prerequisite	Module
1	VKT852	Final Project	6			C
Total			**6**			

The odd semester elective courses

Number	Code	Course	Credits	Course Group	Module
1	VKT742	Food and Agricultural Product Analysis	2	Industrial analysis	C
2	VKT743	Wood, Paper, and Textile Product Analysis	2	Industrial analysis	C
3	VKT744	Petrochemical and Fertilizer Analysis	2	Industrial analysis	C
4	VKT745	Environmental Quality Analysis	2	Environmental analysis	C
5	VKT746	Techniques of Waste Treatment	2	Environmental analysis	C
6	VKT747	Narcotics and Psychotropic Analysis	2	Forensic analysis	C

The even semester elective courses

Number	Code	Course	Credits	Course Group	Module
1	VKT748	Chemical Industry	2	Industrial analysis	C
2	VKT749	Drug and Cosmetics Analysis	2	Industrial analysis	C
3	VKT750	Environmental Impact Assessment	2	Environmental analysis	C
4	VKT751	Forensic Chemistry	2	Forensic analysis	C

C Peer Report for the ASIIN Certificate

1. Formal Information

Criterion 1.1 Formal Information

Evidence:

- Self-Assessment Report
- Study plans of the degree programme
- Academic Guidebook
- Module descriptions
- UII webpage: https://pmb.uii.ac.id/
- Webpage DPCA: https://www.uii.ac.id/en/find-a-course/diploma-iii-analytical-chemistry/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The peers receive almost all required formal information through the Self-Assessment Report, as well as through the programme's website. This information includes the programme name, awarded degree, duration of study, admission requirements as well as the study regulations. The Academic Guidebook for the DPCA programme contains information about the profile, vision and mission, competence of graduates, and curriculum. Students receive all necessary information related to taking courses, learning and teaching activities carried out, lab work policies, fieldwork practices, final project, participation credit unit, graduation requirements at the beginning of every semester. The remaining questions (students' workload, quality management system, academic staff etc.) were answered during the audit discussions with the programme coordinators, teachers, and students. The DCPA programme is taught in Indonesian.

The DPCA programme has been accredited in 2016 by the National Accreditation Board for Higher Education (BAN-PT), under the Ministry of Education and Culture, Republic of Indonesia with level B.

The programme is set within the context of a regular university and the rights and duties of students as well as those of the university correspond to those of higher level programmes. Consequently, all necessary information is provided in the rules and regulations administering the student life cycle.

Final assessment of the peers after the comment of the Provider regarding criterion 1:

The peers consider criterion 1 to be fulfilled.

2. Content, Structure and Implementation

Criterion 2.1 Learning outcomes

Evidence:

- Self-Assessment Report
- Study plans of the degree programme
- Academic Guideline
- Module descriptions
- UII webpage: https://pmb.uii.ac.id/
- Webpage DPCA: https://www.uii.ac.id/en/find-a-course/diploma-iii-analytical-chemistry/
- Discussions during the audit

Preliminary assessment and analysis of the peers:

Universitas Islam Indonesia (UII) has described and published Programme Educational Objectives (PEO) and Programme Learning Out-comes (PLO) for the DPCA programme. While the PEO are rather general and refer to the vision and mission of the degree programme, the PLO cover a number of specific competences students should acquire in their respective degree programme. Both, PEO and PLO are published in the academic guidebook, which is available to all students, staff, and any other interested parties from the study programme's website.

The DPCA programme is a professional education programme that is expected to provide young professional at the level of an intermediate expert in the field of chemical analysis, which is much needed in the Indonesian industry, research institutions, and in government agencies.

As described in the Self-Assessment Report, graduates of DPCA programme should be able to demonstrate an understanding of basic chemical concepts, be able to safely handle chemicals, instruments, tools, and equipment including care and maintenance. In addition, they should be familiar with conducting experiments for data acquisition and processing and be able to interpret the results. This includes sampling and sample preparation, knowledge of the relevant practical methods and analysis procedures as well as following standardised laboratory procedures and regulations, and being able to validate and verify chemical analysis methods.

The peers confirm that the DPCA programme is well aligned with the expectations of level 5 of the European Qualification Framework (EQF). Students receive comprehensive knowledge, theoretical as well as practical, in the field of chemical analysis and are adequately prepared for positions as chemical lab technician or similar fields in the chemical industry, research institutions, and in government agencies. Graduates know how to apply fundamental chemical methods and techniques and can work in laboratories individually as well as in groups. In addition, they are aware of the ethical and legal framework of their actions and professional field and will thus be able to easily integrate into the job market.

Criterion 2.2 Content

Evidence:

- Self-Assessment Report
- Study plans of the degree programme
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The DCPA curriculum is designed to prepare graduates for the national labor market in the area of chemical analysis. Therefore, it refers to the Indonesian National Qualifications Framework (KKNI), the National Competency Standards for Chemical Analysts (SKN-KA) and the Indonesian National Work Competency Standards (SKKNI) in the field of chemical analysis and laboratory testing. The percentage of practical work is approximately 70 %, thus, much higher than the share of theoretical classes.

The DPCA curriculum consists of 110 Indonesian credits (CSU), which includes 98 CSU for compulsory subjects and a minimum of 12 CSU for electives. Electives include courses such as “Industrial Analysis”, “Environmental Analysis”, or “Forensic Analysis”. The compulsory

courses are grouped into three groups, namely university courses (UNI) totaling 14 CSU, basic courses (VKD) totaling 44 CSU and applied courses (VKT) totaling 60 CSU.

Lab work is carried out through learning and teaching activities in the laboratory to develop students' practical competencies. The lab work activity includes several stages consisting of preliminary meetings to explain lab work materials, for lab work preparation, practical sessions to carry out the experiments, meetings for discussing the lab work results and writing the lab work report.

Practical courses are taught by lecturers who are supported by lab assistants. During the classes, students must follow the applicable practice provisions and carry out lab work activities in accordance with the lab work guidebook. Every lab work activity begins with a pretest to find out the readiness of students in carrying out the lab work. The final assessment of the lab work includes several components consisting of the pretest, lab work implementation, lab report, seminar on the results of the lab work, and final exam.

Profession training (internship) is a compulsory subject in the DPCA programme, which is conducted in the fifth semester. It provides opportunities for students to gain work experience before entering the working world, get references from agencies or companies, compare and apply their academic abilities and skills, understands the needs of the working world so that they are better prepared for entering the job market and finding suitable jobs. Profession training can be carried out in the industry, government agencies, research institutes, laboratories, and educational institutions in the field of chemical analysis. During the profession training, each student will get directions from the academic supervisor from UII and an advisor from the institution where the training is conducted.

The Final Project is carried out in the sixth and final semester; it is divided into two parts:

1) Final project in an external institution in the form of a project of three months. The place for implementing the Final Project must be an institution different from the institution where the profession training was done.

2) Final project on the UII campus for three months in the form of a project in the field of chemical testing carried out in a laboratory.

DCPA students will take part in the competency certification process organized by the Indonesian Islamic University Professional Certification Institute (LSP UII) to obtain a competency certificate from the National Professional Certification Agency (BNSP). The certification process is carried out by means of a competency test to measure the acquired competences in basic chemical testing procedures, validation of the spectrometric test methods, and validation of chromatographic testing methods.

Criterion 2.3 Structure

Evidence:

- Self-Assessment Report
- Study plans of the degree programme
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the peers:

The DPCA programme is designed to be completed in six semesters or three academic years. Each semester is equivalent to 16 weeks of learning activities. Besides these learning activities, there is one week for midterm exams and one week for final exams. The odd semester starts in August and ends January of the following year, while the even semester lasts from February to July.

The curriculum consists of university requirements and compulsory and elective courses determined by the Faculty of Mathematics and Natural Sciences and the Department of Chemistry. University requirements are courses that need to be attended by all under-graduate students at UII. There are seven university requirements with 14 CSU: Islamic Education, State Philosophy, English, Bahasa Indonesia for Academic Communication, Islam for Scholars, Civic Education, and Sharia Entrepreneurship. These courses are al-most all offered in the first two semesters of studies, in addition to courses conveying basic knowledge of natural sciences and mathematics.

Courses on the different subject-specific educational sciences are offered from third to eighth semester. Elective courses can be taken from the third year of study. Students usually choose elective courses that relate to their thesis and/or their individual interests.

The peers gain the impression that the graduates of the degree programme under review are well prepared for entering the labour market and can find adequate jobs in Indonesia. During the discussion with the peers UII's partner from the industry/public sector confirm that the graduates have a broad scientific education, are very creative, and have manifold competences, which allows them to find adequate jobs.

Criterion 2.4 Workload

Evidence:

- Self-Assessment Report
- Study plans of the degree programme

- Module descriptions
- Academic Guidelines
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Based on the National Standards for Higher Education of Indonesia (SNPT), all programmes at UII use a credit point system called CSU, which is regulated as follows:

Type of activity	Definition of 1 CSU/week/semester	Duration (min)	TOTAL (min)
Classroom course	Classroom meeting	50	170
	Structured task	60	
	Independent work	60	
Practical course	Practical work	170	170
Seminar	Seminar meeting	100	170
	Independent work	70	

In comparison to ECTS credit system, wherein 1 ECTS credit equals 25-30 hours of students' workload per semester, it is determined that 1 CSU is awarded for 170 minutes of workload per week and the relation between the different kind of learning (contact hours, self-studies) is fixed.

To complete the degree programme in time, Bachelor students need to take an average of 18 CSU per semester excluding co-curricular contents. However, the regular schedule usually covers 20-21 CSU per semester to give more space in the last semesters for resits, or more electives. If a student is not satisfied with his GPA, she or he can repeat the classes, but this will lead to a prolongation of the study time.

As described in the Self-Assessment Report, UII converts the CSU according to the following calculation:

$$
\begin{aligned}
1\ \text{SKS} &= 170\ \text{minutes/week} \\
&= 2.83\ \text{hours/week} \\
&= (16 \times 2.83)\ \text{hours/week} \\
&= 45,328\ \text{hours/semester} \\
1\ \text{ECTS} &= 28\ \text{hours/semester} \\
\text{CESP} &= 144\ \text{SKS} \\
\left(\frac{45,328}{28} \times 144\right)\ &\text{ECTS} = 233\ \text{ECTS}
\end{aligned}
$$

The peers perceive that the underlying credit hour system used for assigning credit points makes use of a fixed amount of contact hours and hours required for self-studies. This results in a conversion rate of about 1 to 1.6 between CSU and ECTS credits. However, the semester workload indicates the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study, and examinations) and these need to be ascribed separately to each component of the curriculum.

The peers point out that the Faculties of Mathematics and Natural Sciences should follow the ECTS Users' Guide, to determine the students' total workload. As described in the ECTS Users' Guide, the estimation of students' workload should include all learning activities. This is the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations).

In other words, a seminar and a lecture may require the same number of contact hours, but one may require significantly greater workload than the other because of differing amounts of independent preparation by students. Typically, the estimated workload will result from the sum of:

- the contact hours for the educational component (number of contact hours per week x number of weeks)
- the time spent in individual or group work required to complete the educational component successfully (i.e. preparation beforehand and finalising of notes after attendance at a lecture, seminar or laboratory work; collection and selection of relevant material; required revision, study of that material; writing of papers/projects/dissertation; practical work, e.g. in a laboratory)
- the time required to prepare for and undergo the assessment procedure (e.g. exams)

Since workload is an estimation of the average time spent by students to achieve the expected learning outcomes, the actual time spent by an individual student may differ from

this estimate. Individual students differ: some progress more quickly, while others progress more slowly. Therefore, the workload estimate should be based on the time an "average student" spends on self-studies and preparation for classes and exams. The initial estimation should then be verified via students' questionnaires.

Since the workload of the students was only estimated by the programme coordinators and seems to be too low in comparison to the actual time needed by the students, the peers suggest re-evaluating the calculation of ECTS and engaging the students in verifying the weight of each module. This could e.g. be done by including a respective question in the course questionnaires. Especially the total workload and the awarded ECTS credits for the final project and the profession training need to be verified.

In any case, UII must make sure that the actual workload of the students and the awarded ECTS credits correspond with each other and make that information transparent in the module descriptions and the study plans.

Criterion 2.5 Admission requirements

Evidence:

- Self-Assessment Report
- Academic Guidelines
- Decree of Minister of Research, Technology and Higher Education No. 2, 2015
- UII webpage: https://pmb.uii.ac.id/
- Discussions during the audit

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Report, the requirements, schedule, registration venue, and selection test are announced on UII's webpage and thus accessible for all stakeholders. The new student admission rules for all Bachelor's degree and Diploma programmes are the same, and is conducted at university level.

There are six different ways by which students can be admitted to a Diploma programme at UII:

1. Report-Based Selection (SIBER), which selects prospective students through student report scores (Semester 3, 4, and 5).

2. Young Leader Search (PPM), which selects prospective applicants/students who have experience as an administrator of student organizations.

3. Computer-Based Test (CBT) is a selection pattern conducted online but carried out at the UII Integrated Campus and several locations outside the UII Integrated Campus.

4. Paper-Based Test (PBT) is a selection pattern consisting of a written test and is held at the UII Integrated Campus.

5. Tracking Outstanding Students (PSB) is a selection pattern facilitated through the assessment of achievements in the academic field and the interests/talents of students in the category of scholarships and non-scholarships.

6. Hafiz Qur'an (PHA) is a selection pattern aimed at outstanding students with high academic ability who have memorized at least the 10th Juz of the Qur'an.

As described in the Self-Assessment Report, the number of applicants exceeds the number of available places:

Study Program	2018/2019			2019/2020			2020/2021		
	No. of applicants	No of Registered	No. of Dropped out	No. of applicants	No of Registered	No. of Dropped out	No. of applicants	No of Registered	No. of Dropped out
DCPA	557	134	5	493	176	0	230	67	10

The high number of applications is due to the good job perspectives of the graduates. On average, DCPA graduates are able to get a job in less than the first 3 months after graduation. They can find suitable jobs as professional laboratory workers and technicians in various chemical companies and institutions.

This situation is typical for the more prestigious Indonesian universities, because there are so many high school graduates every year in Indonesia and the number of study places is limited. For UII this has the advantage, that they are able only to admit the most suited students.

In summary, the auditors 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 2.6 Prospects of the labour market and practical orientation

Evidence:

- Self-Assessment Report
- Discussions during the audit

Preliminary assessment and analysis of the peers:
As described before, DPCA graduates have very good job perspectives. As the students point out during the audit, DPCA graduates have better chances for finding a suitable job soon after graduation than graduates form Bachelor's programmes, because young professionals in chemical analysis are much needed in the industry, research institutions, and government agencies In Indonesia.

In the discussions with business representatives during the audit, it was confirmed that graduates are well prepared for qualified employment. The business representatives emphasised that UII graduates are ready to take on demanding work positions. The peers appreciate that the intended qualification profiles allow the graduates to take up an occupation, which corresponds to their qualification in a comparatively short period after graduation.

Final assessment of the peers after the comment of the Provider regarding criterion 2:

The peers confirm that UII has asked the students about their workload, but this should be done systematically, e.g. by including a respective question in the questionnaires. The answers then need to be analysed by each programme and adjustments, if necessary, should be implemented. The peers expect UII to provide verification of the procedure and a summary of the results.

The peers consider criterion 2 to be partially fulfilled.

3. Examination: System, Policy and Forms

Criterion 3 Exams: System, policy and forms

Evidence:

- Self-Assessment Report
- Module descriptions
- Academic Guideline

Preliminary assessment and analysis of the peers:
According to the Self-Assessment Report, the students' academic performance is evaluated based on their attendance and participation in class, their laboratory works and reports, assignments, homework, presentations, mid-term exam, and the final exam at the end of

each semester. The form and length of each exam is mentioned in the syllabus, which is available to the students via UII's homepage and the digital platform SIMAK.

The written exams can be multiple choice, quizzes, or essays. In addition, there are oral exams, especially for assessing the laboratory work. The students are informed about mid-term and final exams via the Academic Calendar. The final grade is the result of the different activities in the course (e.g. laboratory work, mid-term exam, the final exam, quizzes or other given assignments).

If a student fails, he has to repeat the entire module in the following semesters; it is not possible to retake just parts of the course or to retake just the final exam. In addition, UII offers two remedial weeks after each semester for students who want to make up on failed exams, missed classes, or to improve their grades in order to be able to complete the programme within the allowed period of time. The peers also learn that students have the chance to appeal their grades. The appeal/complaint form is a university wide policy and a standardised process. The further details are described the Academic Guideline.

The peers discuss with the students how many and what kind of exams they have to take each semester. They learn that for each course there is one mid-term exam and one final exam in every semester. Usually, there are additional practical assignments or oral tests. The final grade is the sum of the sub-exams. The students appreciate that there are a several short exams instead of one big exam and confirm that they are well informed about the examination schedule, the examination form, and the rules for grading.

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

Final assessment of the peers after the comment of the Provider regarding criterion 3:

The peers consider criterion 3 to be fulfilled.

4. Supporting Processes I: Teaching Methodology and Support

Criterion 4.1 Teaching methodology

Evidence:

- Self-Assessment Report
- Study plan

- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Various teaching and learning methods (including lectures, computer training and classroom and lab exercises, individual and group assignments, seminars and projects, etc.) have been implemented. Structured activities include tutorials, homework, assignments (reading or problem exercises) and practical activities. Group project assignments are given in some courses to develop students' skills in teamwork, communication, and leadership. The assignments and exercises should help students to develop their abilities with respect to critical thinking, written/oral communication, data acquisition, problem solving, and presentations.

UII has the goal to support the transition from a teacher-centred to a student-oriented teaching method in order to involve all students in the learning process and to develop their thinking and analytical skills.

During the classes, active and interactive teaching methods (e.g. lectures, discussions, reports, presentations, and group work) are applied. This should ultimately contribute to the transition from a teacher-centred to a student-centred learning approach.

The most common method of learning is class session, with several courses having integrated laboratory practices. Lecturers generally prepare presentations to aid the teaching process. With individual or group assignments, such as discussions, presentations, or written tasks, students are expected to improve their academic as well as their soft skills. Laboratory work covers laboratory preparation, pre or post-tests, laboratory exercises, reports, discussions, and presentations. In addition, practical activities should enable students to be acquainted with academic research methods.

To help students achieving the intended learning outcomes and to facilitate adequate learning and teaching methods, UII has developed an e-learning platform, where students and teachers can interact.

The peers point out that the COVID-19 pandemic currently does and similar future scenarios may probably affect face-to-face teaching and practical work. In order to be prepared to and deal with such situations, the peers recommend not using only online teaching for imparting practical competences. They suggest using blended/hybrid learning, which refers to different teaching/learning scenarios that combine online and face-to-face mode (physical presence) in varying proportions, while keeping the pandemic-related risk low. Blended learning combines the advantages of face-to-face events and e-learning in such a way that the respective advantages are strengthened and the disadvantages are compensated. The

usage and meaning of "hybrid learning" has taken on a special component and also refers to teaching/learning scenarios in which a course can be offered simultaneously in the presence -for one group of students- and online -for another group of students. In these scenarios, too, face-to-face (physical presence) and online components are linked. In this respect, hybrid teaching/learning scenarios represent a special case of blended learning. From the peers' point of view, hybrid learning during pandemics would be useful and highly recommended in order offering practical laboratory classes in compliance with hygienic regulations and measures so that students can go to the laboratories.

Otherwise, the peer group considers the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes.

Criterion 4.2 Support and assistance

Evidence:

- Self-Assessment Report
- Academic Guideline
- Discussions during the audit

Preliminary assessment and analysis of the peers:
UII offers a comprehensive advisory system for all undergraduate 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 and is responsible for approximately 20 students from his/her classes. The academic advisor 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. The students confirm during the discussion with the peers that they all have an academic advisor.

In general, students stress that the teachers are open minded and communicate well with them and take their opinions and suggestions into account and changes are implemented if necessary (e.g. shifting the class on scientific writing to the first semester).

All students at UII have access to the digital academic portal (SIMAK) which is integrated with the University Information System. The students' profiles (student history, study plan,

academic transcript and grade point average/GPA, lecturer evaluation, course list) are available via SIMAK.

Finally, there are several student organizations at UII; they include student's activity clubs, which are divided into arts, sports, religious and other non-curricular activities.

The peers notice the good and trustful relationship between the students and the teaching staff; 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. The peers judge the extensive advisory system to be one of the particularly strong points of UII.

In general, students are very satisfied with their respective degree programme, including the advisory and support system, the lectures as well as the facilities and the technical equipment.

Final assessment of the peers after the comment of the Provider regarding criterion 4:

The peers consider criterion 4 to be fulfilled.

5. Supporting Processes II: Resources

Criterion 5.1 Staff

Evidence:

- Self-Assessment Report
- Staff Handbook
- Study plan
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the peers:

At UII, the 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. The responsibilities and tasks of a staff member with respect to teaching, research,

and supervision depend on the academic position. In addition, there are several supporting non-academic staff members at the Faculty of Mathematics and Natural Sciences; they include administrative staff, laboratory assistants, technicians, and librarians.

The DCPA programme is taught by 11 teachers (1 professor, 1 associate professor, 9 assistant professors). In total, there are 91 academic staff members at FMNS. However, the peers are missing detailed information about the exact number of teachers in the different departments. For this reason, they ask UII to provide a table detailing how many professors, associate professors, assistant professors, and lecturers are employed by the FMNS. This should include an overview for the whole Faculty and the Department of Chemistry.

All members of the teaching staff are obliged to be involved in the areas (1) teaching/advising, (2) research, and (3) community service. As the peers 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.

The peers discuss with UII's management, how new staff members are recruited. They learn that every year the faculties and departments announce their vacancies to UII's management. The open positions are then announced publicly. One common way to recruit new teachers is to send promising Master's students abroad to complete their PhD and then to hire them as teachers when they are finished.

UII encourages the training of its academic and technical staff with a focus on improving teaching abilities and supporting publications. This is done by providing training in teaching methodologies and publication writing. In addition, young teachers receive coaching, especially for scientific writing, public speaking, and community service. Young staff members with a Master's degree are encouraged to pursue doctoral studies (usually abroad).

The peers 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 UII, their opportunities to further improving their didactic abilities and to spend some time abroad to attend conferences, workshops or seminars.

In summary, the peers confirm that the number, composition, scientific orientation, and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programme.

Criterion 5.2 Institutional setting, funding and equipment

Evidence:

- Self-Assessment Report
- Videos of the facilities
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Basic funding of the degree programme and the facilities is provided by UII and the Faculty of Mathematics and Natural Sciences. The financial sources are government funding, tuition fees from students, community and industry funding. Additional funds for research activities can be provided by UII or the Indonesian government (Bantuan Pendanaan Perguruan Tinggi Nasional, BPPTN), but the teachers have to apply for them.

The provided budget allows the departments to conduct the study programme as well as some specific activities, including student exchange programmes, student financial assistance for research, and participation in international conferences. However, the budget is limited and not all projects can be supported. Moreover, the peers did not receive detailed information about the different sources of funding. For this reason, they ask UII to provide information about the amount and share of the different sources of income (government funds, tuition fees, community, and industry).

The academic staff members emphasise that from their point of view, the DCPA programme receives sufficient funding for teaching and learning activities. The students confirm this positive impression and state their satisfaction with the available resources.

From the provided documents and videos of the laboratories, the peers deduct that there seem to be no severe bottlenecks due to missing equipment or a lacking infrastructure. The basic technical equipment for teaching the students is available, although it is not state of the art in all cases. The students confirm during the discussion with the peers that in general, they are satisfied with the available equipment, only some instruments are outdated. Moreover, the peers learn during the audit that students can use and operate the instruments in the laboratories by themselves after being trained and instructed by either senior students or lab technicians. Each laboratory has a lab supervisor; in addition, there are several senior students that work as lab assistants.

Nevertheless, the peers cannot make a final assessment of the quality of the technical equipment and the infrastructure on the basis of the videos and the discussions alone. Only some laboratories are shown in the videos and especially the scope and design of the safety standards remain unclear (material and surface quality of the working benches, safety goggles, gloves, eye showers, fire extinguishers, emergency exits, chemical-proof cabinets,

first-aid kits, gloves, ventilation system (quantitative information such as air exchange rates achieved both in the overall lab and in the fume hood would be required), fume hoods, etc.). For this reason, the peers point out that it is necessary to assess the technical infrastructure, safety measures, and facilities onsite at UII. A team of at least one expert together with an ASIIN programme manager should visit FMNS in order to confirm that the infrastructure, the technical equipment and the safety measures meet the required standards.

The peer group understands that modern research equipment for sophisticated laboratory work, sufficient in terms of quality and quantity, is not readily available and that the funds are restricted. This is partly compensated by the fact that teachers of UII have the opportunity to use instruments that are available at the central laboratory at Universitas Gadjah Mada, (a renowned public university in Yogyakarta).

Moreover, the peers emphasise that all students need to have the opportunity to get hands on experience with chemicals and carrying out laboratory experiments. For this reason, the number of students conducting one experiment should be reduced. In order to gain sufficient practical experience in the laboratories, groups conducting one experiment should be limited to 2 to 3 students.

The students express their satisfaction with the library and the available literature. The central library that offers direct access to international literature, scientific journals, and publications e.g. via ScienceDirect. From the students' point of view, there is sufficient access to current international literature and databases and a remote access is possible.

Besides the already mentioned restrictions, the auditors judge the available funds, the technical equipment, and the infrastructure (laboratories, library, seminar rooms etc.) to comply with the requirements for sustaining the degree programme.

Final assessment of the peers after the comment of the Provider regarding criterion 5:

The peers are glad that UII agrees with the necessity of on-site visit, in order to assess the quality of the infrastructure, the facilities, the technical equipment, and the safety measures in the laboratories.

In addition, the peers point out that it would be very useful to have enough instruments and working places so that students can carry out the experiments in groups of two to three in all practical courses.

The peers consider criterion 5 to be mostly fulfilled.

6. Quality Management: Development and Enhancement

Criterion 6.1 Quality assurance & enhancement

- Self-Assessment Report
- Academic Guideline
- Discussions during the audit

Preliminary assessment and analysis of the peers:
The auditors discuss the quality management system at UII with the programme coordinators and the students. They learn that there is a continuous process in order to improve the quality of the degree programme and it is carried out through internal and external evaluation. The quality assurance system at UII is carried out through internal quality audits (Audit Mutu Internal/AMI). The activities of internal quality audits are coordinated by the Quality Assurance Board (BPM) and conducted once a year. AMI results are presented in management review meetings (RTM) at the faculty and university level. RTM recommendations are used as the basis for changes and continuous quality improvement. The results of internal quality assessments are evaluated on faculty level during the Management Review Meetings (RTM), attended by the dean, vice deans, heads of departments, heads of laboratories, degree programme managements and the Quality Assurance Unit. The RTM takes the final decision on all audit findings and initiates corrective actions if necessary.

Internal evaluation of the quality of the degree programme is mainly provided through student surveys. The students 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 UII's digital platform. The questionnaires are used to monitor and evaluate the learning processes and are distributed every semester to the lecturers before the final exam is done. Students assess various aspects such as reliability, assurance, tangibility, empathy, and responsiveness of the teacher. Students' opinion is quantified by means of index 1 (unsatisfactory) to 4 (excellent). A summary of the students' feedback is sent to the respective lecturers. Based on the results, the programme coordinator and the teachers re-assess every course and possibly some changes are made. If there are negative results, the Department Head invites the concerned teacher to discuss about his or her teaching methods and thus, they are expected to enhance their performance in the future.

The auditors gain the impression that the Department of Chemistry take the students' feedback seriously and changes are made if necessary. Nevertheless, the peers see that the results of the course questionnaires are usually not discussed with the students. Consequently, the peers expect UII to inform students about the results of the questionnaires

and the teachers should discuss with them about possible improvements in the respective course. The feedback loops need to be closed.

Moreover, students confirm during the audit that they are not represented in the university's boards and, thus, are not directly involved in the decision-making processes. Although, there are student unions in every department whose members regularly meet with the programme coordinators to discuss about problems or other issues concerning the degree programme. The peers 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 take part at the Management Review Meetings (RTM), be members of boards at UII (at least on programme level, e.g. Task Force of Quality System), and be actively involved in the decision making processes for further developing the degree programme. There is the students' parliament at UII, but it focuses on organising extracurricular activities and its members are not involved in the academic procedures at their UII. The peers appreciate that student representatives vote on the election of the Deans and the Rector and regularly meet with the Directorate of Student Affairs.

In addition, UII regularly conducts an alumni tracer study. By taking part at this survey, alumni can comment on their educational experiences at UII, the waiting period for employment after graduation, their professional career and can give suggestions how to improve the programme. Moreover, the employers are asked to give feedback to UII on employability and acquired competencies of UII's graduates.

To their graduates finding suitable jobs, UII yearly organises a career day. Partners from companies or public institutions are invited to present themselves on the campus and to attract graduates as employees.

External quality assurance focuses on both national and international accreditations. National accreditation is conducted by the National Accreditation Board for Higher Education (BAN-PT), under the Ministry of Education and Culture, Republic of Indonesia. National accreditation of the programme within the university is a legal obligation for every study programme.

The peers discuss with the representatives of UII's partners from public institutions and private companies if there are regular meetings with the partners on faculty or department level, where they discuss the needs and requirements of the employers and possible changes to the degree programme. They learn that some employers and alumni invited to give their feedback on the content of the degree programme. To this end, the Department of Chemistry has established an Academic Advisory Board. In addition, alumni and partners from the industry are invited to give lectures and to donate money for grants. As the peers consider the input of the employers to be very important for the further improvement of

the degree programme, they appreciate the existing culture of quality assurance with the involvement of employer in the quality assurance process.

In summary, the peer group confirms that the quality management system is suitable to identify weaknesses and to improve the degree programme.

Criterion 6.2 Instruments, data and methods

Evidence:

- Self-Assessment Report
- Academic Guideline
- Discussions during the audit

Preliminary assessment and analysis of the peers:
Apart from the survey-based quality management processes, UII and the Department of Chemistry collect a variety of data in order to better understanding students' progress, difficulties, or room for improvement. Discussions with the programme coordinators confirm that these data are taking seriously and some changes were applied based on the results.

In summary, the peers confirm that UII and the Department of Chemistry collect analytical data and use it for analysing and possibly improving the learning and teaching processes.

Final assessment of the peers after the comment of the Provider regarding criterion 6:

The peers confirm that students' satisfaction surveys are conducted every semester, but they are not convinced that the results are regularly discussed with the students. For this reason, they expect UII to make sure that all teachers discuss with their students about the results of the questionnaires and what improvements might be possible.

The peers thank UII for pointing out that student representatives are included in the Academic Advisory Boards (DEPERA) at department level. DEPERA consists of representatives of study programmes, lecturers, representatives of students, alumni, and stakeholders. They meet at least one a semester to evaluate learning activities and to suggest improvements. However, the peers still think that is would also be useful that students' representatives take part at the Management Review Meetings (RTM)and that they should be members of the Task Force of Quality System so that they are directly involved in the decision making processes.

The peers consider criterion 6 to be mostly fulfilled.

7. Documentation & Transparency

Criterion 7.1 Relevant documents

- Self-Assessment Report
- Module descriptions
- Homepage DPCA programme: https://www.uii.ac.id/en/find-a-course/diploma-iii-analytical-chemistry/
- All relevant regulations

Preliminary assessment and analysis of the peers:
The auditors confirm that the rights and duties of both UII and the students are clearly defined and binding. All rules and regulations are published on the university's Indonesian website and hence available to all stakeholders. In addition, the students receive all relevant course material in the language of the degree programme at the beginning of each semester.

However, the peers notice that the English website of the programme does not include much information. For this reason, the peers encourage UII to update the English websites of the programme and to include information about the intended learning outcomes, study plan, module descriptions, and academic guideline and make them thus available to all relevant stakeholders.

In addition, the peers point out that there is no official guideline for disability compensation. It should be regulated how students with special needs can be supported e.g. in attending classes and taking the exams. Since such a regulation does not yet exist, the peers expect UII to draft a regulation for disability compensation of handicapped students.

After studying the module descriptions, the peers see that the DPCA programme at the Department of Chemistry all make use of different templates and that the provided information is not complete. For example, the module descriptions do not always fulfill their need to make transparent, how each exam contributes to the final grade and what kind of exam is required. In addition, the calculation of the students' total workload and the conversion into credits is either missing or not transparent. Moreover, some module descriptions were not provided by UII. For this reason, it is necessary to submit the complete module handbooks for each degree programme.

In addition, the peers expect UII to redo the module description and to include all necessary information (persons responsible for each module, intended learning outcomes, teaching

methods, students' workload, awarded credit points, content, applicability, admission, examination requirements, forms of assessment, and details explaining how the final grade is calculated).

Criterion 7.2 Certificate upon conclusion

Evidence:

- Self-Assessment Report
- Sample Diploma
- Sample Diploma Supplement

Preliminary assessment and analysis of the peers:
The peers confirm that the students 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 necessary information about the degree programme including acquired soft skills and awards (extracurricular and co-curricular activities). The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA, and mentions the seminar and thesis title.

The auditors point out that a Diploma Supplement should also include statistical data about the distribution of final grade according to the ECTS Users' Guide. This allows the reader to categorise the individual result. For this reason, the peers ask UII to include this additional information in the Diploma Supplement.

Final assessment of the peers after the comment of the Provider regarding criterion 7:

The peers appreciate that UII has updated the module descriptions now include information about the form of assessment, the composition of the final grade, the students' total workload, and the awarded ECTS points.

In addition, UII now issues a Diploma Supplement that also includes statistical data about the distribution of final grade according to the ECTS Users' Guide.

Finally, UII has updated the programme's website, which now includes information about the intended learning outcomes, study plans, module descriptions and academic guidelines.

However, the peers point out that UII still needs to draft a guideline for recognising credits achieved outside UII and a guideline for disability compensation. The peers see that UII has a regulation on “Fulfilment of Rights of People with disabilities”, but this regulations does not detail what compensation measure are possible e.g. for taking exams.

The peers consider criterion 7 to be mostly fulfilled.

D Additional Documents

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

- How many professors, associate professors, assistant professors, and lecturers are employed by the Faculty of Mathematics and Natural Sciences? Please provide an overview for the Faculty and the Department of Chemistry.
- From which sources derives the funding of UII? What is the share of the different sources (government funds, tuition fees, community, and industry)?
- Complete standardised module handbook.

As detailed in the report, the peers consider it necessary to visit UII in order to get a first-hand impression of the lab equipment, the safety measures, the research infrastructure, and the facilities. In addition, it would be useful to have a face-to-face meeting with the students.

E Comment of UII (20.09.2021)

UII provides the following statement:

First of all, DPCA, Faculty of Mathematics and Natural Sciences UII extends its gratitude to ASIIN committee and all peer reviewers for giving the opportunity to evaluate its study programs in order to be accredited and certified by ASIIN through the visitation.

Regarding the information asked in Section D, the task force has attempted to complete the documents and online information including:

- The information on the lecturers and their academic position (professors, associate professors, assistant professors, and lecturers) employed by the faculty is provided in **Attachment 1.** The information is also accessible on the website: https://science.uii.ac.id/lecturers.
- The information on funding derived by UII is provided in **Attachment 2**.
- All study programs have completed the standardised module handbooks. The documents are provided in **Attachment 3** or on the following link https://bit.ly/modul-handbook-DPCA.

We are excited with ASIIN's intention and consideration to plan a site visit to our campus. We are convinced that the site visit will result in a more intensive evaluation and chance to enhance the quality of teaching-learning and educational management since it enables the face-to-face meetings with the lecturers, students, graduates, and alumni. In addition, we can show the real situation of the laboratories, instrumentations availability, and laboratory management in our campus.

Criterion 1.1: Formal Information

DPCA appreciates the positive comments regarding the objective and learning outcomes of the degree programmes. On the university level, UII has a regulation related with how a curriculum of a study program should be prepared, moreover, the monitoring of the curriculum is also conducted by the government through several statutes. In July 2021, DPCA obtained "Unggul" (Excellent) accreditation, which is the highest achievement of the accreditation regulated by the National Accreditation Board for Higher Education (BAN-PT), under the Ministry of Education and Culture, Republic of Indonesia. All necessary information is provided in the rules and regulations governing the student life cycle on https://science.uii.ac.id/en/regulation/.

Criterion 2.3: Structure

The courses in DPCA consists of 110 credits equivalent to 187 ECTS credits. The courses in different subject-specific educational sciences are offered from the third to sixth semester. Elective courses can be taken from the second year of study. Students usually choose elective courses that relate to their thesis and/or their individual interests. In the third year, students will carry out professional training and final project related to the development of analytical methods in industry.

Criterion 2.4: Workload

DPCA adopts the regulations from both national and university level. The regulations on the university level are actually derived from the regulations on the national level by considering some other aspects. One of the regulations related with the academic process can be seen on : https://bit.ly/edu-learning-process. DPCA has revised the student workload count. The student exam load has been included in the workload calculation, so the workload count for 1 CU becomes 170 minutes/week for 16 weeks. Therefore, the total hours for 1 CU is 45 hours equivalent to 1.7 ECTS. The results of the revised module handbooks can be seen on the website link as follows https://diploma.chemistry.uii.ac.id/en/courses/.

The ECTS conversion calculation:
1 CU = 170 min/week or 2.8 hours/week
Total hours for 1 CU= 2.8 hours x 16 = 45 hours
If 1 ECTS = 27 hours, so
1 CU = 45 hours/27 hours = 1.7 ECTS

To investigate whether the student workload related to study work or credits given by the lecturer to the students is already in accordance with the portions or allowed. The team in the faculty conducted a survey to collect the students‘ responses. This questionnaire was addressed to the active students of the FMNS in the academic year 2020/2021. The results showed that more than 80% of students stated the workload was appropriate which were compiled from the responses in the categories of quite satisfied – very satisfied with the workload. The results of the questionnaire can be found at https://diploma.chemistry.uii.ac.id/en/quisioner-workload/.

Criterion 4.1: Teaching methodology

1. DPCA has conducted a blended learning experiment in the Spectrometry Lab Work with the help of the Virtual Laboratory (https://vlab-d3akuii.com/vlab-d3akuii/ and https://bit.ly/teaser-vlab) for the online learning process and practical work in a laboratory with a limited number of students. There are four online lab work activities and two offline lab work activities. The results of the student questionnaires related to this learning process can be seen on the website https://diploma.chemistry.uii.ac.id/en/profile-en/design-

blended/. In the future, DPCA will indeed try to formulate a lab work with a blended learning model.

2. Universitas Islam Indonesia (UII) has formed a special task force to manage all communications and the implementation of university policies during the Covid-19 pandemic (https://www.uii.ac.id/covid-19/). Our main priority is to actively contribute to various collective efforts to prevent virus transmissions in the campus environment and to maintain the health and safety of all academics. The document on mitigation of Covid-19 at UII can be accessed at https://www.uii.ac.id/wp-content/uploads/2020/03/Mitigate-the-spread-of-Covid-19.pdf. In June 2021, DPCA conducted an on-site labwork with hygienic regulations in the laboratory (https://diploma.chemistry.uii.ac.id/en/sop-labwork/).

Criterion 5.1: Staff

DPCA programme is taught by eight lecturers (assistant professors), but in the implementation of the learning process it involves the lecturers from the Department of Chemistry, so the total number of lecturers involved in the teaching process at DPCA is eleven lecturers (one professor, one associate professor, and nine assistant professors). The existence of sharing lecturers in the Department of Chemistry can support improving the quality of lecturers in the areas of (1) teaching/advising, (2) research, and (3) community service. The information about the lecturers in Faculty of Mathematics and Natural Sciences can be seen at https://science.uii.ac.id/lecturers/.

Criterion 5.2: Institutional setting, funding and equipment

1. UII is a private university so the main funding is tuition fees from the students. In addition, UII also receives external funding from business units and external grants. An overview of cash flow in FMNS can be seen in Table E.1. The amount of tuition fee for each student at DPCA is around Rp.39,270,000.00 or equivalent to € 2,328.30.

Table E.1. Cash flow at FMNS UII (in 2020)

No	**Income**	**Total in Rupiah**	**Total in EUR**	**Percentage**
1	Internal income from tuition	22,618,000,000.00	1,341,010.93	66.02
2	External income (business units, external grants)	11,640,188,361.00	690,141.47	33.98
	Expenditure		-	
1	Total disbursement	34,258,188,361.00	2,031,152.41	100
	Balance	**0**	**-**	

2. In order to support the laboratory activities for students and staffs of FMNS UII, some accessible, calibrated, and certified instrumentations are available. Some important chemistry instruments including XRD, FTIR, NMR, SEM-EDX, HPLC, GC-MS, GSA etc. are in good

condition. Almost all instruments are available for hands-on use by all students and researchers. In addition, they are regularly calibrated based on ISO 17025/2017. The list of laboratory instruments is available in this attachment: https://science.uii.ac.id/wp-content/uploads/List-of-Instrumentation-Facility_ASIIN.pdf. The virtual journey in the laboratory related to technical infrastructure, safety measures, and facilities can be seen on https://science.uii.ac.id/en/virtual-journey-in-laboratory/. The infrastructure of the laboratory is appropriate as there are safety lines in all laboratory area, the laboratory map, fire safety system including alarm, safety map to meeting points, and fire extinguisher, as well as sufficient fume hoods and exhaust in every room. The safety aspect related with chemicals transport is also monitored by an online system (SIMLAB), and all chemicals are stored in the chemical storage room. Such laboratory regulations including safety regulation are set up by the coordinator of laboratory in the department level, so the same standards for practicum, research and other laboratory-related activities for all study programs within the same department are applied.

3. In lab work activities at DPCA, one class of students will be divided into four groups (consisting of five to six people) for scheduling activities, but during the lab work, each group will be further divided into two small groups, with the number of each group's members between 2-3 students.

Criterion 6.1: Quality assurance & enhancement

1. DPCA has made improvements based on the results of the questionnaires. Generally, in the lecture preparation meeting, the Head of DPCA conveys the results of the questionnaires and discusses for the improvements. In addition, the supervision of improvements related to student questionnaires is carried out by the Internal Audit. The results of the process can be seen on the website address https://diploma.chemistry.uii.ac.id/en/education-survey/.

The lecturers also share the learning contracts at the first meeting of the lectures with the students. The contents are related to the agreement between lecturers and students for the learning process of the course during the semester.

2. One of the student representatives has been made a member of the Academic Advisory Boards (Depera) whose job is to oversee the implementation and evaluation of the curriculum every year, and to provide recommendations for improvement during the curriculum review every five years. The board consists of the representatives of Head of Study Programs, lecturers, scientific fields, students, and the alumni users and stakeholders. The Decree of Dean regarding the Academic Board of Chemistry Department can be accessed bellow: https://science.uii.ac.id/en/academic-course/depera/.

Criterion 7.1: Relevant documents

1. We appreciate the peer's recommendation. The website of DPCA has been updated with the relevant information for clearer and more relevant rules, mainly the information on English version (https://diploma.chemistry.uii.ac.id/en/).

2. The regulation for disability compensation of handicapped students is attached on the website https://bit.ly/regulation-24. In order to realize the service of the rights of Persons with Disabilities in the campus environment, a service unit for Persons with Disabilities is formed on the University level. The service unit for Persons with Disabilities has the following duties and authorities: a) Improve the competence of educators and education personnel in higher education to deal with the students with disabilities; b) Coordinate each work unit in the tertiary institution in meeting the special needs for students with disabilities; c) supervise and evaluate the implementation of appropriate accommodation; d) provide counseling services to students with disabilities; e) conduct early detection for students with indicated disabilities; f) refer students with indicated disabilities to doctors, psychologists, or psychiatrists; and g) provide dissemination of the understanding on disability and inclusive education system for educators, education staff, and students.

3. We are grateful that the peers pointed this out. As suggested by the peers, DPCA has revised the module handbooks, completed with the more detailed information about the persons responsible, intended learning outcomes, teaching methods, students' workload, awarded credit points, content, applicability, admission, examination requirements, forms of assessment, and final grade in the module description for each course. The results of this revision can be seen on the website https://diploma.chemistry.uii.ac.id/en/courses/ or https://bit.ly/modul-handbook-DPCA.

Criterion 7.2: Certificate upon conclusion

DPCA really appreaciates the peers for the suggestions regarding Diploma Supplement. Following up this suggestion, we have improved the contents of the diploma supplement by adding the statistical data on the distribution of final grade. An example of the revised Diploma Supplement can be found on the website https://bit.ly/SKPI-DPCA.

F Summary: Peer recommendations (11.10.2021)

Taking into account the additional information and the comments given by UII, the peers summarise their analysis and **final assessment** for the award of the ASIIN certificate as follows:

Programme	ASIIN Certificate	Maximum duration of certification	Alignment to a Qualification Framework Level
Diploma Programme Chemical Analysis	With requirements for one year	30.09.2027	EQF 5

Requirements

A 1. (ASIIN Criterion for Certification 2.4) Make sure that the awarded ECTS points comply with the students' total workload.

A 2. (ASIIN Criterion for Certification 5.2) It is necessary to visit and assess the technical infrastructure, safety measures, and facilities onsite at UII.

A 3. (ASIIN Criterion for Certification 6.1) Close the feedback cycles and make sure that all teachers discuss with their students about the results of the questionnaires and what changes might be possible.

A 4. (ASIIN Criterion for Certification 7.1) Draft a guideline for recognising credits achieved outside UII.

A 5. (ASIIN Criterion for Certification 7.1) Draft a guideline for disability compensation.

Recommendations

E 1. (ASIIN Criterion for Certification 5.2) It is strongly recommended to increase the scope of practical laboratory work and to provide enough technical equipment so that experiments can be done by groups of two to three students.

E 2. (ASIIN Criterion for Certification 6.1) It is recommended to make student representatives members of the boards at UII and to directly involve them in the decision making processes for further developing the degree programmes.

G Decision of the Certification Commission (09.12.2021)

Assessment and analysis for the award of the ASIIN Certificate:

The Certification Commission discusses the procedure and decides several editorial changes and justifies these changes as follows:

Requirement 3 (evaluation cycle) seems not to be properly addressed in the eyes of the Commission, since the wording insinuates that feedback discussion shall and will be with those students actually taking part in the course. This cannot be achieved as long as evaluations are carried out at the very end of the semester just before the examinations. Still, the aim of the requirement – closing of a feedback cycle – is considered justified. Hence, the Commission modifies its formulation to more generally addressing the issue of feedback with students in the frame of the evaluation process.

As it is clear that no rules of recognition of academic achievements acquired at other universities do exist so far, the Commission sees not only the necessity to *elaborate* such rules but also to *put them into effect* (requirement 4).

Contrary to this, a guideline for disability compensation seems to be already in place according to the comments of the university, yet not detailing sufficiently how the compensation procedure exactly works. The Commission therefore modifies the wording of the respective requirement 5 accordingly.

Further, the Certification Commission agrees with the recommended resolution of the peers.

The Certification Committee decides to award the ASIIN certificate as follows:

Programme	**ASIIN Certificate**	**Maximum duration of certification**	**Alignment to a Qualification Framework Level**
Diploma Programme Chemical Analysis	With requirements for one year	30.09.2027	EQF 5

Requirements

A 1. (ASIIN Criterion for Certification 2.4) Make sure that the awarded ECTS points comply with the students' total workload.

A 2. (ASIIN Criterion for Certification 5.2) It is necessary to visit and assess the technical infrastructure, safety measures, and facilities onsite at UII.

A 3. (ASIIN Criterion for Certification 6.1) Ensure that students are given feedback about the results of the module/course evaluations.

A 4. (ASIIN Criterion for Certification 7.1) Elaborate and implement a guideline for recognising learning outcomes achieved outside UII.

A 5. (ASIIN Criterion for Certification 7.1) Specify the existing guideline for disability compensation in terms of describing concrete compensation measures (e.g. for exams).

Recommendations

E 1. (ASIIN Criterion for Certification 5.2) It is strongly recommended to increase the scope of practical laboratory work and to provide enough technical equipment so that experiments can be done by groups of two to three students.

E 2. (ASIIN Criterion for Certification 6.1) It is recommended to make student representatives members of the boards at UII and to directly involve them in the decision making processes for further developing the degree programmes.