ASIIN Seal

Accreditation Report

Bachelor's Degree Programmes
Biology Education
Physics Education

Provided by
Universiti Pendidikan Sultan Idris, Malaysia

Version: 24 September 2024

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]
Sarjana Muda Pendidikan (Biologi) dengan Kepujian	Bachelor of Education (Biology) with Honours	ASIIN	Malaysian Qualification Agency (MQA) 2013 - today	10
Sarjana Muda Pendidikan (Fisika) dengan Kepujian	Bachelor of Education (Physics) with Honours	ASIIN	Malaysian Qualification Agency (MQA) 2013 - today	13
Date of the contract: 27.07.2023 **Submission of the final version of the self-assessment report:** 20.01.2024 **Date of the audit:** 28.05. – 30.05.2024				
Expert panel: Prof. Dr. Susanne Heinicke, University Muenster Prof. Dr. Kerstin Kremer, University Giessen Prof. Dr. Thomas Trefzger, University Wuerzburg Medina Andini, Biology teacher, Surabaya Hafiz Bin Mazlan, Universiti Teknologi Malaysia, student				
Representative of the ASIIN headquarter: Rainer Arnold				

[1] ASIIN Seal for degree programmes;
[2] TC: Technical Committee for the following subject areas: TC 10 – Life Sciences; TC 13 – Physics;

Responsible decision-making committee: ASIIN Accreditation Commission	
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria as of 23.03.2023 Subject-Specific Criteria of Technical Committee 10 – Life Sciences as of 28.06.2019 Subject-Specific Criteria of Technical Committee 13 – Physics as of 20.03.2020	

B Characteristics of the Degree Programmes

a) Name	Final degree (original)	b) Areas of Specialization	c) Corresponding level of the EQF[3]	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Bachelor of Education (Biology) with Honours	Sarjana Muda Pendidikan (Biologi) dengan Kepujian	-	6	Full time	No	8 semesters	132 credit hours (211.2 ECTS points)	2008/2009
Bachelor of Education (Physics) with Honours	Sarjana Muda Pendidikan (Fisika) dengan Kepujian	-	6	Full time	No	8 semesters	134 Credit Hours (214.4 ECTS points)	15/04/2013

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

For the Bachelor's degree programme Biology Education, Universiti Pendidikan Sultan Idris (UPSI) has presented the following profile in the Self-Assessment Report:

"The Bachelor of Education (Biology) with Honours program is an academic programme accredited by Malaysia Qualification Agency (MQA) since April 15, 2013. This programme focuses on education and it aligns with the EQF level 6. It also operates on a full-time study mode spanning eight semesters. With a total credit point requirement of 132 (211.2 ECTS), this program aims to produce graduates proficient in Biology Education. It seeks to nurture knowledgeable, skilled, ethical, creative, and innovative individuals capable of confronting present and future challenges within the field of Biology Education."

For the Bachelor's degree programme Physics Education, Universiti Pendidikan Sultan Idris (UPSI) has presented the following profile in the Self-Assessment Report:

"The Bachelor of Education (Physics) with Honours program is an academic programme accredited by Malaysia Qualification Agency (MQA) since March 11, 2013. This programme focuses on education and it aligns with the EQF level 6. It also operates on a full-time study mode spanning eight semesters. With a total credit point requirement of 134 (214.4 ECTS), this program aims to produce graduates proficient in Physics Education. It seeks to nurture knowledgeable, skilled, ethical, creative, and innovative individuals capable of confronting present and future challenges within the field of Physics Education."

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 Reports
- Study plans of the degree programmes
- Module descriptions
- Homepage UPSI: https://www.upsi.edu.my/
- Homepage Faculty of Science and Mathematics: https://fsmt.upsi.edu.my/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
The experts base their assessment of the learning outcomes on the information provided on the websites and in the Self-Assessment Report of both the Bachelor's degree programme Biology Education and the Bachelor's degree programme Physics Education

The main goal of the Faculty of Science and Mathematics (FSM) is to improve and strengthen the knowledge and skills of future graduates/teachers and to prepare them in the field of science and mathematics education for secondary and tertiary institution. For both programmes, Universiti Pendidikan Sultan Idris (UPSI) has described and published Programme Educational Objectives (PEO) and Programme Learning Outcomes (PLO). The PEO are worded rather general and refer to the vision and mission of UPSI's: "To be a prestigious university providing exceptional leadership in education, based on the advantage of broad experience and high level of competency in meeting global changes." The university's mission is: "To generate and foster knowledge through teaching, research, publication, consultancy and community services to achieve the vision of the nation." The PLO cover a number of specific competences students should acquire in their respective degree programme. Both, PEO and PLO of each degree programme are published on FSM's webpage.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee Life Sciences as a basis for judging whether the intended learning outcomes of the Bachelor's degree programme Biology Education, as defined by UPSI, correspond with the competences as outlined by the SSC. They come to the following conclusions:

Graduates of the Bachelor's degree programme Biology Education should understand the basic biological processes and be capable of applying the scientific and pedagogical methods of the biological sciences. In addition, graduates should acquire relevant scientific knowledge in the different biological areas such as botany, zoology, biotechnology, microbiology, molecular biology, cell biology, and related natural sciences (chemistry, physics). Furthermore, the students should be able to conduct independent laboratory and fieldwork, plan, implement, assess, and follow up the educational biology learning process and be able to design and perform experiments in biology learning to collect, analyse, and interpret data to solve biological issues. Finally, students should be qualified to conduct lifelong learning and work effectively, both individually and in a team, to demonstrate scientific, critical, and innovative attitude in biology learnings, laboratory works, and environmental care.

The Bachelor's degree programme Biology Education is designed to produce competitive graduates with competences to work as biology educators/teachers, who are able to plan, implement, evaluate, and develop modern biology learning. As junior research assistants, graduates should be able to examine issues in biology and biology learning by implementing scientific methods and be able to design and carry out research projects in the area of biology education. As entrepreneurs, graduates should be qualified to manage a business unit and to develop local biological-based business ideas through innovation and creativity.

The experts refer to the Subject-Specific Criteria (SSC) of the Technical Committee Physics as a basis for judging whether the intended learning outcomes of the Bachelor's degree programme Physics Education, as defined by UPSI, correspond with the competences as outlined by the SSC. They come to the following conclusions:

The intended learning outcomes of the Bachelor's degree programme Physics Education focus on conveying scientific and educational methods for observing, understanding, analysing, and solving physical phenomena and problems. This includes that graduates should acquire fundamental physics-relevant knowledge of mathematics, computer sciences, and natural sciences. They should understand the concepts, laws, and theories of physics and their application in studying natural processes and phenomena. Furthermore, graduates need to know how to conduct and prepare experiments, including the application of scientific methods, for learning or research purposes. They should also apply the principles of

learning safety in physics laboratories and be able to use instruments, teaching aids, calculators, and computer software to improve physics learning in the classroom, laboratory, and field. In addition, graduates should be capable to apply and evaluate modern methods and instruments of physics learning and teaching by using information and communication technology as well as digital media.

The Bachelor's degree programme Physics Education aims to produce graduates who are knowledgeable, skilled, ethical, creative and innovative in facing current and future challenges related to physics education.

Supplementing the subject-related qualification objectives, students of both Bachelor's programmes should have adequate competences in oral and written communication skills, be capable of working autonomously as well as in a team-oriented manner, and be able to conduct research activities. Furthermore, they should have trained their analytical and logical abilities, are able to apply information and communication technology in the field of education, and show a social and academic attitude. Both programmes are designed to provide a broad and coherent knowledge and skills base, along with specialized knowledge in a particular field of study. Finally, students should acquire communicative and language skills and should develop a strategy for life-long learning.

During the audit, the experts discuss with students, teachers, and alumni where the graduates can find suitable jobs. They learn that graduates mostly work as teachers in public and private schools. The experts confirm that both Bachelor's degree programmes have a scientific quality, which is equivalent to the EQF level 6. Similarly, the Malaysian Qualifications Framework (MQF), which is the national framework for qualifications in Malaysia, also places both Bachelor's programmes at level 6. Furthermore, they are convinced that the intended qualification profiles of both undergraduate programmes under review allow students to take up an occupation, which corresponds to their qualification. The degree programmes are designed in such a way that they meet the goals set for them. The experts conclude that the objectives and intended learning outcomes of the degree programmes adequately reflect the intended level of academic qualification and correspond sufficiently with the ASIIN Subject-Specific-Criteria (SSC) of the Technical Committee 10 – Life Sciences (Biology Education) and the SSC of the Technical Committee 13 – Physics (Physics Education).

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report

Preliminary assessment and analysis of the experts:
UPSI awards a Bachelor of Education with Honours (B.Ed.) or Sarjana Muda Pendidikan dengan Kepuji as degree to the graduates of both undergraduate programmes.

The names of the degree programmes properly reflect the respective focus and content of the undergraduate programmes, which is on education in the respective scientific area.

The experts confirm that the English translation and the original Malay names of both Bachelor's degree programmes correspond with the intended aims and learning outcomes as well as the main course language (Malay).

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Reports
- Study plans of the degree programmes
- Module descriptions
- UPSI Academic Management Handbook
- Homepage UPSI: https://www.upsi.edu.my/
- Homepage Faculty of Science and Mathematics: https://fsmt.upsi.edu.my/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
Both programmes are offered by the Faculty of Science and Mathematics (FSM) of Universiti Pendidikan Sultan Idris (UPSI). Each semester is equivalent to 14 weeks of learning activities. Besides these learning activities, there is one week for the midterm break and three weeks for exams. The odd semester starts in August and ends in January of the following year, while the even semester last from February to July. A systematic university-wide review of the curriculum is conducted every four years but minor changes may be implemented every year after endorsement by FSM.

Undergraduate students at UPSI must register for courses each semester with a minimum limit of twelve credit hours and a maximum of twenty credit hours except for final semester students. The maximum limit above does not include practicum credits/teaching training/industrial training and projects. All students have to complete the undergraduate programme within six years. The students' individual study plans are different from each other, but have to be approved by their academic advisors.

The Bachelor's degree programme Biology Education is designed for four years and offered as a full-time programme. All students have to complete the undergraduate programme within six years. The curriculum encompasses, 132 credit hours, this is equivalent to 211.2 ECTS points and consists of compulsory courses, minor subjects, and electives. The compulsory courses include university requirements, professional education courses, teaching practise, and major courses. Compulsory courses are subjects' courses that students must take as a condition for graduating and obtaining a bachelor's degree. Electives and minors are courses that students choose based on their interests. The general structure of the curriculum is depicted in the following table:

Classification	Credits	ECTS	Percentages (%)
University courses	19	30.4	14.4
Professional education courses	27	43.2	20.5
Major courses	46	73.6	34.8
Teaching practice	10	16	7.6
Minor courses	21	33.6	15.9
Open elective	9	14.4	6.8
Total	**132**	**211.2**	**100%**

Table 1: Curriculum Structure Ba Biology Education, Source: SAR UPSI

The Bachelor's degree programme Physics Education is designed for four years and offered as a full-time programme. All students have to complete the undergraduate programme within six years. The curriculum encompasses, 134 credit hours, this is equivalent to 214.4 ECTS points and consists of compulsory courses, minor subjects, and electives. The compulsory courses include university requirements, professional education courses, teaching practise, and major courses. Compulsory courses are subjects' courses that students must take as a condition for graduating and obtaining a bachelor's degree. Electives and minors are courses that students choose based on their interests. The general structure of the curriculum is depicted in the following table:

Classification	Credits	ECTS	Percentages (%)
University courses	19	30.4	14.1
Professional education courses	27	43.2	20.1

Major courses	48	76.8	36.3
Teaching practice	10	16	7.4
Minor courses	21	33.6	15.5
Open elective	9	14.4	6.6
Total	**134**	**214.4**	**100**

Table 2: Curriculum Structure Ba Physics Education, Source: SAR UPSI

University requirements are courses that need to be attended by all undergraduate students at UPSI. There are nine university requirements with 19 credit hours: “Malay Discourse Skills”, “Essential English 1”, “Essential English 2”, “Philosophy and current issues”, “Appreciation of Ethics and Civilization”, “Nationhood studies”, “Entrepreneurial Culture”, “Integrity and Anti-Corruption”, and “Sports/Society”. International students have slightly different university courses, as they have two Malay language courses and the course “Malaysian Art and Cultural Heritage” instead of “Philosophy and current issues” and “Nationhood studies”.

These courses are almost all offered in the first two semesters of studies, in addition to courses conveying basic knowledge of natural sciences, mathematics, and education. There are also eight compulsory courses, which focus on education: “Education Development in Malaysia: Philosophy & Policy”, “Sociology of Education”, “Psychology in Education”, “Design, Assessment and Teaching Technology”, “Teaching Practice Reflection Seminar”, “Inclusive education”, “Professional Teachers”, “Implementation of Biology/Physics Teaching”, and “Implementation of Minor Teaching”. Moreover, all students of both programmes have to complete the two teaching practise courses: “Teacher Apprentice” and “Teaching Practice”. These courses are designed to foster robust cooperation with high schools by ensuring that students gain invaluable first hand exposure and practical insights into the teaching profession and equipping them with real-world skills and experiences. The 4-week teacher apprentice course and the 16-week teaching practice course are both conducted within high school settings. The execution of the teaching practice is coordinated by the Center for Teaching Practice and Industrial Training (PULAMI). Throughout the teaching practice, students will receive dual supervision from a lecturer and also an experienced school teacher. Evaluation criteria for teaching practice include students' proficiency in teaching preparation, their actual teaching execution, and the demonstration of exemplary professional ethics.

Courses on the different subject-specific sciences are offered from third to eighth semester. This includes courses in Biochemistry, Cell Biology, Biotechnology, Histology, Genetics,

Anatomy, Physiology, Animal, Plant, Fungal, Bacterial, Microbiology, Developmental Biology, Taxonomy, and Ecology for the Bachelor's degree programme Biology Education and courses in Mechanics, Vibrations, Waves & Optics, Electromagnetism, Electronics, Thermodynamics, Solid State Physics, Computer Programming & Interfacing, Astronomy, Modern & Quantum Physics, and Nuclear & Particle Physics for the Bachelor's degree programme Physics Education.

Elective courses are usually taken from the third year of study. Students usually choose elective courses that relate to their thesis and/or their individual interests.

During the eight semesters, students must also complete their final project (Bachelor's thesis, 6 credit hours). Final Year Project (I) covers the development of research proposals, including literature research and scientific methodology. In this course, students have to design a research proposal with a time schedule for the project, which is discussed with the thesis supervisor. If they agree, students apply formally for being allowed to work on the suggested topic in the Final Year Project (II). This course covers the research activities as well as reporting on the research project. All final projects need to be related to either biology or physics education and all student have to gather and analyse data from high schools.

The experts appreciate that classes at FSM are partly taught in English and that all course material is provided in English. If there is an international student in the class, e.g. from China, the lectures are all given in English, otherwise, English and Malay are both used as teaching languages.

In general, the experts confirm that both degree programmes are well designed and impart a broad range of competencies so that graduates can find suitable jobs as teachers, educators, researchers, and entrepreneurs. The experts gain the impression that the graduates of both degree programmes under review are well prepared for entering the labour market and can find adequate jobs in Malaysia. They stress that both programmes are well balanced between subject specific and educational content, including modern methods and technologies of interactive teaching.

However, there are some areas where the curriculum could be improved. During the discussion with the experts, the employers from high schools suggest to improve students' communication and presentation skills as well as their competencies in classroom management and using digital teaching methods. The new interactive teaching labs are ideal for this purpose and should be used to this end. Additionally, employers noticed that graduates could improve their flexibility in using new assessment methods. This should be taken into

consideration when teaching students on assessment methods and their suitability for different teaching situation. Especially online and hybrid tools should be introduced. Finally, it would be useful to better align the practical experiments taught to students with the requirements of the high schools. As the experts learn during the audit, usually only four experiments are conducted in each practical course (e.g. optics) and this does not seem sufficient. For this reason, the experts suggest increasing the number of experiments in the practical courses as it will improve the graduates' experimental teaching abilities and it is always useful if teachers can present more experiments than just the minimum requirements.

After analysing the module descriptions (Course Pro Forma) and the study plans, the experts confirm that both degree programmes under review are divided into modules and that each module is a sum of coherent teaching and learning units. All practical lab work and internships are well integrated into the curriculum and the supervision by the Faculty of Science and Mathematics 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 ensure that the intended learning outcomes of the respective degree programme can be achieved.

International Mobility

UPSI is actively advancing internationalisation by establishing partnerships with numerous universities from several countries such as Singapore, Indonesia, Philippines, Thailand, China, Bangladesh, Australia, New Zealand, Japan, Kazakhstan, Uzbekistan, United Kingdom, and United Arab Emirates through Memorandums of Understanding or Agreements, facilitating collaborative teaching and research activities. FSM has set itself the goal of involving at least 4% of students in internationalisation activities, either through physical presence or online lectures. Student mobility at UPSI is coordinated by the International & Mobility Centre (IMC), which was established in 2018 and serves as the main center of the university in coordinating students' exchange programs for both UPSI students going abroad as well as receiving students from overseas. It also organises various other programmes and activities for international students. IMC works directly under UPSI's Deputy Vice-Chancellor for Academic and International Affairs.

UPSI provides some opportunities for students to conduct internships and exchange programmes abroad. Students who take part in student exchanges through cooperation programmes can gain recognition of the acquired credits after obtaining approval from their undergraduate programme. The credits acquired abroad are transferable to UPSI, the procedure is based on the Credit Transfer Policy established by the Malaysian Qualification

Agency (MQA). Credits acquired abroad are recognised by UPSI if there is at least a similarity of 80 % between a course at the international university and a course at UPSI.

The UPSI International Affairs Division is responsible for managing and coordinating the international activities such as coordinating and managing student mobility programmes, developing and maintaining relationships with partner institutions and organisations around the world, recruiting and admitting international students, providing support and assistance to international students during their time at UPSI, such as helping with housing, visa issues, and other practical matters. Some financial support is available for students that want to spend some time abroad.

The number of students, from either the Biology Education or the Physics Education programme, who spend some time abroad is still low despite students' high interest. For example, in the last five years (2019-2024), about 10 students from the Biology and Physics Education programmes have participated in international exchange programmes.

The students confirm during the discussion with the experts that some opportunities for international academic mobility exist and that the credits acquired abroad are recognised at UPSI. However, they also point out that they wish for more places and scholarships for long- and short-term stays abroad. The number of available places in the mobility programmes is still limited and there are restrictions due to a lack of sufficient financial support. The lack of financial support hinders students from joining the outbound programmes. The experts understand these problems and recommend to increase the efforts to further internationalising UPSI by offering more places in international exchange programmes and more scholarships. For example, it would be possible to cooperate with international high schools abroad so that students can conduct their teaching practise there.

The experts emphasise that it is very useful for students to spend some time abroad already during the later semesters of their Bachelor's studies to improve their English proficiency, to get to know other educational systems, and to enhance their job opportunities. As the experts learn during the audit, UPSI is planning to offer dual degree programme with universities in Kazakhstan and Indonesia. The experts support these plans and consider them to be a step into the right direction.

A good starting point for initiating more international co-operations are the personal international contacts of the faculty members and the guest lecturers. It is also possible for students and teachers to apply to international organisations like the German Academic Exchange Council (DAAD) for receiving funds for stays abroad. In addition, FSM should invite more academics from renowned international universities as guest lecturers.

In summary, the experts appreciate the effort to foster international mobility and support UPSI to further pursuing this path. However, with respect to academic mobility there is still room for improvement.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- UPSI Admission Requirements Handbook 2023
- Homepage UPSI: https://www.upsi.edu.my/
- Homepage Faculty of Science and Mathematics: https://fsmt.upsi.edu.my/
- Discussions during the audit

Preliminary assessment and analysis of the experts:
According to the Self-Assessment Report, admission procedures and policies for new students follow the national regulations in Malaysia. Since 2023/24 UPSI enrols only once a year (October) in the Biology and Physics Education programmes. There were not enough qualified applications for the second intake for several years in a row, so UPSI decided to cancel the possibility for a second intake. Prospective students interested in joining UPSI's programmes have to apply through the national centralized online system known as UPU Online, which serves as a digital platform for applicants seeking enrolment at all Malaysian universities. Alternatively, for the March intake, prospective students have the option to directly apply to UPSI.

According to the UPSI Admission Requirements Handbook 2023, there are three categories of admission for the Bachelor's degree programmes:

1. Malaysian Higher Certificate Examination (STPM): The Malaysian Higher School Certificate (Malay: Sijil Tinggi Persekolahan Malaysia), commonly abbreviated as STPM, is a pre-university examination in Malaysia. It was formerly known as the Higher School Certificate (HSC). Since 1982, STPM has been administered by the Malaysian Examinations Council (MEC), a statutory council under the Ministry of Education. STPM is one of the major pre-university systems for admissions to Malaysian public universities.
2. Matriculation/Science Foundation: The Malaysian Matriculation Programme (Malay: Program Matrikulasi Malaysia) is a one year pre-university preparatory programme offered by the Ministry of Education. The Foundation programme is similar, the only difference is that it is not offered by universities but by other educational institutions.

3. Diploma: Graduates from Diploma Degree programmes, which are recognised by the university senate.

Candidates applying through UPU can select their preferred universities and study programmes. All applications are shortlisted based on the applicant's academic record and the STPM results. The university then invites the best candidates to take part at their specific admission procedure. In case of FSM, this includes the Malaysian Educators Selection Inventory Test (MEdSI) and an interview. For the Biology and Physics Education programmes, six times the number of available study places will be invited to take part at MEdSI, which is a psychometric test to verify if the candidate is suitable for becoming a teacher. Candidates who get a minimum score of 55 out of 100 in MEdSI are eligible for the interview. Usually, three times the number of available study places will be invited to the interview. During the interview, candidates will be evaluated based on their communication skill, knowledge, language proficiency and personality. After the interview, the candidates will be ranked based on their overall results. The details are described in the Admission Requirements Handbook.

The experts see that the Bachelor's degree programme Physics Education receives many applications and the demand is higher than the number of available study places. During the last five years, between 349 (2020/21) and 451 (2022/23) candidates applied for the programme. The capacity of the Physics Education programme is between 30 and 100 students per intake. The acceptance quota is between 8.4 % (2022/23) and 24 % (2020/21). The exact numbers are shown in the following table:

Academic Year		**2020/21**	**2021/22**	**2022/23**	**2023/24**
Applications	**First intake**	301	366	406	408
	Second intake	48	28	45	
	Sum	349	394	451	408
Enrolment	**First intake**	64	61	38	62
	Second intake	20	0	0	
	Sum	84	61	38	62

Table 3: Applications and Enrolment, Physics programme, source: SAR UPSI

The number of applications for the Bachelor's degree programme Biology Education is even higher. During the last five years, between 824 (2020/21) and 491 (2021/22) candidates applied for the programme. The acceptance quota is between 14.1 % (2020/21) and 22.4 % (2023/24). The capacity of the Biology Education programme is between 30 and 100 students per intake. The exact numbers are shown in the following table:

Academic Year		2020/21	2021/22	2022/23	2023/24
Applications	**First intake**	301	430	612	527
	Second intake	523	61	84	-
	Sum	824	491	696	527
Enrolment	**First intake**	88	61	82	98
	Second intake	28	18	41	20
	Sum	116	79	123	118

Table 4: Applications and Enrolment, Biology programme, source: SAR UPSI

Undergraduate students at UPSI have to pay tuition fees. The fees for the Bachelor's degree programme Biology Education and for the Bachelor's degree programme Physics Education for Malaysian and international students is RM 8032 and RM 23774 respectively. There are no internal scholarships provided by UPSI. However, the Islamic Charity Center of UPSI (Pusat Wakaf, Endowmen, Zakat, Khairat dan Sedekah) provides tuition fee assistance for students from low-income families. Although UPSI does not offer scholarships outside of the Islamic Charity Center, there are many public agencies such as The Council of Trust for the People(MARA) and the Public Service Department(JPA) that offer easily obtainable variable loans with generous repayment rates for students. Additionally, the government offers PTPTN, a loan to every Malaysian citizen which they can apply for loan exemption if they graduate with first class honours.

In summary, the experts find the terms of admission to be binding and transparent.

Criterion 1.5 Work load and credits

Evidence:

- Self-Assessment Reports
- Study plans
- Module descriptions
- Discussions during the audit

Preliminary assessment and analysis of the experts:

In Malaysia, credit hours for each course are allocated according to the required students' learning time, including lectures, tutorials, seminars, practical work, self-studies, research, fieldwork, as well as preparing for and sitting of an examination. As per Malaysian Qualification Framework (MQF) definition, one credit hour is equivalent to 40 hours of students' workload. As UPSI calculates that 25 hours of students' work are required for one ECTS point, the conversion factor between Malaysian credit hours and ECTS point is 40/25 = 1.6.

Student learning time (SLT) is divided into three categories: guided learning (face-to-face), guided learning (non-face-to-face), and independent learning (non-face-to-face). This division recognises the diverse nature of the educational programme, incorporating various classroom instructions, self-directed studies, and assessments.

Students' workload is monitored at the beginning of each semester. The monitoring is carried out through Constructive Alignment (CA) meeting whereby lecturers will declare their instruction plan, students' tasks, assessment, and the suitability of the allocated SLT.

The experts point out that it is not useful to have a fixed conversion rate between Malaysian credit hours and ECTS points, because the ECTS points need to be calculated separately for each course. This is necessary, because the time students need for self-studies is different for each course. Since the students' workload is based on the centralised requirements form MQA, the experts expect UPSI to re-evaluate the calculation of ECTS points by asking the students directly 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, UPSI would facilitate academic mobility and better support their graduates if they apply for international programmes.

In any case, UPSI 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 (course proforma) and the study plans.

The experts confirm that both programmes have a high but manageable workload. Students can give their feedback on the courses and comment if they think that the workload is too high. However, there should be a regular and institutionalised survey on students' workload in every course.

Criterion 1.6 Didactic and Teaching Methodology

Evidence:

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

Preliminary assessment and analysis of the experts:

Various teaching and learning methods such as lectures, class and group discussions, case studies, demonstrations, assignments, simulations, experiments, field studies, teaching practise, and problem-based learning are applied in both undergraduate programmes under review. Structured activities include 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. As mentioned before, students' skills in digital media and information technology, however, could be improved.

To ensure that the applied teaching methods are suitable for achieving the intended learning outcomes they are designed to allow an effective delivery of the course content particularly by embedding blended learning. This involves a combination of face-to-face learning and online learning using the UPSI learning management system, MyGuru and other online platforms. Under the blended learning approach, each course must consist of 30 %-79 % of online learning as the mode of delivery.

Students are further encouraged to apply their knowledge in a series of student projects that are oriented towards teaching practice in the classroom and in laboratories. Classes and laboratories are designed in problem-based learning settings in order to introduce student-oriented teaching methods to involve all students in the learning processes and to develop their thinking and analytical skills. Problem based learning and student centred learning is used in several courses and students are assigned to group projects and have to

present their findings in front of the class. In addition, teaching practice in form of school internships is also part of the curriculum.

The most common method of learning is class session, with several courses having integrated laboratory work. Lecturers generally prepare presentations to support the teaching process. In addition, several courses include teaching practice sessions or micro-teaching (i.e. students presenting teaching practice trials in front of their experts). 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 this end, it would be advisable to conduct more experiment in the practical sessions in the Physics Education programme.

At UPSI, Student Learning Outcome Monitoring (SLOM) is applied to monitor the achievement of learning outcomes for each student. It is an index that calculates for each student the average score obtained in the assessments. In addition, Course Learning Outcome Achievement (CLOM) is used for continuous quality improvement by obtaining performance indicators for every study programme. The CLOM system was introduced in 2011/2012 session to assess course learning outcomes, it provides an achievement index for each learning outcome of a course and also an overall index for the course.

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 concept of both undergraduate 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).

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

The experts appreciate that UPSI agrees that students' communication and presentation skills as well as their competencies in classroom management and using digital teaching methods should be improved. Additionally, UPSI will strive to establish more international cooperation to increase students' academic mobility.

The experts stress that it is important to ask the students directly about their total workload in order to verify the ECTS point calculation. UPSI should provide the relevant documents in the further course of the accreditation procedure.

With respect to the scope of experiments in the laboratory classes, the experts point out that it would be useful if UPSI would incorporate more hands-on experiments and would give students more practical experiences that align with the skills and knowledge students will need in their future career as teachers.

The experts consider criterion 1 to be mostly fulfilled.

2. Exams: System, concept and organisation

Evidence:

- Self-Assessment Reports
- Module descriptions
- UPSI Academic Management Handbook
- Discussions during the audit

Preliminary assessment and analysis of the experts:

According to the Self-Assessment Reports, the students' academic performance is evaluated based on their attendance and participation in class, their laboratory works and reports, assignments, homework, presentations, projects, and the final exam at the end of each semester. The form of each exam is mentioned in the module descriptions (Course Pro Forma) that are available to the students via UPSI's digital platform. Usually, there is one written exam in each course (besides the assignments, homework, and presentations); final exams are conducted in the 16th week of the semester.

As described in the module descriptions, students' performance is usually assessed by assignments, laboratory work, presentations, and final exam. Participation includes attendance (minimum of 80 %), asking and answering question, active in a discussion or in an experiment (observation), and performance. Continuous assessment methods can contribute from 60 % to 100 % to the final grade, while the final examination, should not contribute more than 40 % to the final grade.

The grading system is different for the teaching internships, and the final project. The details, which assessment forms are used in these courses and how they contribute to the final grade, are described in the respective module descriptions.

The most common type of evaluation used are written examinations; however, quizzes, laboratory work, assignments (small projects, reports, etc.), presentations, seminars, and

discussions may contribute to the final grade. Written examinations, either closed-book or open-book, typically include short answers, essays, problem-solving or case-based questions, and calculation problems. Some lecturers also give multiple choice or true-false questions in examinations or quizzes. The grade from laboratory work usually consists of laboratory skills, discussions, reports, and oral exams. Students can access their results via UPSI's digital platform MyGuru.

Student competencies during the school internship are guided and assessed by lecturers, and tutor teachers, from partner schools. The assessment is conducted based on students' competencies in using learning tools, teaching materials, learning media, and assessment instruments. In addition, students are also required to be able to identify learning problems in the classroom and propose solutions. Reports on problem identification and solutions are presented in front of supervisors and tutor teachers.

Every undergraduate student is required to do a final year project (Bachelor's thesis). This project is conducted independently under the guidance of one or more supervisors and usually consists of literature study, practical research, and data analysis. Both the student and his /her supervisors might decide the topic and content of the project. In many cases, the lecturers offer particular topics connected to their research. This course is conducted in two semesters. In the sixth semester, students take "Final Year Project I", where students prepare a research proposal. In the seventh semester, students take Final Year Project II during which students perform the research and write the project report. An official guideline on the final year project is provided and can be accessed by students via the website of the Faculty of Science and Mathematics. Finally, there is a presentation, during which the students have to present their results and defend them in front of a panel.

The maximum score that a student can get in a course is 100. Students who obtain Grade C- and below for any major course are required to repeat the course. Students should pass university courses with a minimum grade D (> 35%). and all professional education courses with a minimum grade of C (> 50%). The exception is the teaching practice, which has a minimum passing mark of B (>65%). If a student fails, she or he usually has to repeat the entire module in the following semester; it is usually not possible to retake just parts of the course or to just retake the final exam.

The grading scale is depicted in the following table:

Mark range	Grade	Grade value
80 - 100	A	4.00
75 - 79	A-	3.75
70 – 74	B+	3.50
65 – 69	B	3.00
60 – 64	B-	2.75
55 – 59	C+	2.50
50 – 54	C	2.00
45 – 49	C-	1.75
40 – 44	D+	1.50
35 – 39	D	1.00
0 - 34	F	0.00

Table 3: Grading scale, Source: SAR UPSI

Student are allowed to continue their studies if they get a GPA of 2.00 or more. Students, who obtain a GPA between 1.70 and 1.99, will be given warning status. Students must attend all lectures, tutorials, labs, studios, or other activities related to their course. Attendance of less than 80% causes the student to be prevented from sitting the final examination of the course. In order to graduate, every student needs to pass the Malaysian University English Test (MUET) at level 3 and above.

The preparation of exam questions is the responsibility of the course lecturer. All exam questions need to be reviewed, evaluated, and verified by the Faculty's Question Assessment Committee (Vetting Committee), which is responsible for ensuring that exam questions are suitable to verify the achievement of the intended learning outcomes in each course. The absence of students in the midterms and finals due to illness or otherwise is remediable by taking the exam later (replacement exam).

Within one week after the announcement of the final grades, students can ask for explanations and can appeal their grades. The appeals can be made to the Division of Academic Affairs. The decision on the appeal as approved by the Senate is final.

UPSI allows a "Special Examination" for final semester students, who fail one or a maximum of two courses in their final semester, so that they have the opportunity to graduate in time. The "Special Examination" can be sat only once with a fee of RM 50.00 and students must submit an application within two weeks after the examination results are announced.

Students with disabilities or special needs such as visual impairment (blindness/severe nearsightedness) can apply for special help for conducting exams. The students need to fill in the "Examination Form for Students with Disabilities", which needs to get the approval of the Dean. Possible support are for example exam questions in Braille Code, software for blind students and separate examination rooms.

Exam dates are based on the Academic Calendar, which needs to get approved by the University Senate. Examinations can be held every day during the examination period determined by the Senate except on days declared as holidays. The examination schedule is announced at the latest during the week 10 of the lectures. Applications for amendment of the examination schedule by students must be made officially with the support of the Faculty Dean and course lecturers. The final exam schedule is announced by UPSI's Division of Academic Affairs (BHEA) at the latest during the 12th week of lectures and will be displayed in UPSI's digital platform. The examination procedures are described in the UPSI's Academic Management Handbook.

The students appreciate that there are several short exams instead of one big exam and confirm that the exam load is appropriate, and they are well informed about the examination schedule, the examination form, and the rules for grading.

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:

UPSI does not comment on this criterion 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
- Discussions during the audit

Preliminary assessment and analysis of the experts:
At UPSI, the staff members have different academic positions. There are professors, associate professors, senior lecturers, 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 or an associate 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.

According to the Self-Assessment Report, the teaching staff for the Bachelor's degree programme Biology Education consists of 34 persons with various functional positions and academic degrees. Currently there are 10 associate professors, 22 senior lecturers, and two lecturers. 31 teachers hold doctoral degrees and three teachers have a Master of Science.

The current academic staff of the Department of Physics at UPSI consists of 21 members, following the retirement of two teachers last year. The staff now includes 1 full professor, 3 associate professors, and 17 lecturers. 15 teachers hold doctoral degrees and six teachers have a Master of Science.

If there is an increase in the number of students, the department, if necessary, will appoint part-time lecturers or tutors to handle the additional classes. The department also has a mechanism to appoint retired professors to return to service through a scheme called the "Skim Sarjana Utama (SSU)". The department also provides overtime payment facilities if laboratory assistant services are required beyond their usual working hours.

The experts discuss with UPSI's management how new staff members are recruited. They learn that the recruitment of academic staff members is based on the regulations of the Ministry of Higher Education. The Human Resource Division of Universiti Pendidikan Sultan Idris is responsible for filling vacant academic positions in accordance with the approval of

the Public Service Department (JPA) of Malaysia. The need for new teachers is based on the number of students, current number of lecturers, and number of offered courses. Based on academic background, the minimum requirement as an academic staff is a Master's degree in a field of physics. However, candidates with PhD are preferred. The ratio between academic staff members and students is set by the Malaysian Qualification Agency (MQA). The ratio in the Biology programme is currently 1:14 and in the Physics programme 1:8, which complies with the ratio set in the MQF under the Academic Staff Load Guidelines (1:20).

The Department Heads forecast the required staff numbers based on departmental needs and forwards the vacancies to UPSI's management, which subsequently announces the vacancies on UPSI's webpage. Application forms received throughout the year are matched with the department's requirements for new lecturers. The Head of the Department subsequently selects several candidates, considering factors such as academic qualifications and expertise, for the interview screening process.

New teachers are offered either permanent or limited contracts based on their academic background and their teaching experience. Candidates without previous teaching experience will be usually offered limited contracts. However, limited contracts can be changed to a permanent one if the respective teaching shows adequate competency as required by UPSI.

During the audit, the experts inquire how high the teaching load is and if enough opportunities are offered to the academic staff members to conduct research activities. They learn that teachers at UPSI have a teaching load that depends on their academic rank and position:

- 3 credit hours per week for Dean/Director
- 6 credit hours per week for Deputy Dean/ Deputy Director/Head of Department/Head of College/Coordinator
- 6 - 9 credit hours per week for Full Professors
- 9 - 12 credit hours per week for Associate Professors/Senior Lecturers and Lecturers

Most of the academic staff in the Biology and Physics departments apply for research grants every year, particularly the FRGS (Fundamental Research Grant Scheme). These proposals are often related to biology or physics education, either as the main researcher or as a co-researcher. Annually, academic staff members also supervise final-year projects related to biology and physics education, such as the development of teaching aids and educational research.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining both degree programmes.

Staff Development

UPSI encourages training of its academic and technical staff for improving the educational abilities and teaching methods. As described in the Self-Assessment Report, a Continuous Professional Development (CPD) system is implemented at UPSI. It applies the concept of continuous learning, which is designed for increasing professionalism through the addition of knowledge, skills, and experience. These activities run alongside the assigned daily tasks. Each of these activities will be given credit points that are used in the Annual Performance Evaluation Report (Laporan Penilaian Prestasi Tahunan; LNPT) of academic staff members.

Trainings are offered by the Human Resources Division and includes topics such as active and challenge-based learning, as well as outcome-based education. Firstly, academic and support staff need to apply online. Once recommended by the Head of Department and approved by the Dean, the staff members can join the training.

In addition, the Teaching & Learning, Assessment and Supervision (TLAS) program is implemented at UPSI. The TLAS programme is a structured training programme for improving learning and teaching methods, curriculum design, student supervision, and assessment methods. Through this training programme, various trainings are introduced to all academic staff members at UPSI.

New staff members without experience in teaching at high schools need to do a three-month-long “internship” at a high school in order to become familiar with teaching and learning methods. In addition, all new teachers have to complete a programme for enhancing their didactic abilities. This programme includes ten courses: Massive Open Online Course (MOOC), Open Educational Resources (OER), Artificial Intelligent, Augmented Reality and Virtual Reality, Gamification, Flipped Classroom, Active Learning, Challenge Based Learning, Assessment for Learning Strategies, Outcome Based Education (OBE), and Supervision and Observation Simulation. These courses are offered by the Training Unit of the Human Resource Division and have to be completed with the first years of employment at UPSI.

During the audit, the experts inquire if the teaching staff has the opportunity to spend time abroad and to participate in international projects. They learn that there is a long-term training programme funded by the Ministry of Higher Education for academic staff who have a doctoral degree and want to conduct studies and research activities in their respec-

tive fields of expertise domestically or abroad. The funding covers conference and publication fees, and expenses for accommodation and traveling. Moreover, academic staff are given 16 days of leave per year and financial support for attending seminars and conferences within and outside the country. The teachers are satisfied with the existing opportunities and the available financial support. Finally, teachers have the opportunity to take a sabbatical leave.

In summary, the auditors confirm that UPSI offers sufficient support mechanisms and opportunities for members of the teaching staff who wish for further developing their professional and teaching skills.

Student Support

UPSI has a Counselling Centre that can be used by students to obtain guidance and counselling services. The centre helps students through psychological tests and guides students towards addressing challenges and problems through individual and group counselling sessions. New students are required to attend the Orientation Week Programme, which is conducted a week before the semester starts. Briefings about the organisation of the university, faculties, and departments are included and are designed to smoothen the transition from high school to university life.

To help students with entering the job market, UPSI has established the Entrepreneurial and Graduate Employability Centre (Pusat Keusahawanan dan Kebolehpasaran Graduan; EDGE). This centre provides opportunities for the graduates and current students to participate in events, workshops, and programmes to help them develop their professional skills. In addition, EDGE helps students' transition into the labour market by connecting them with potential employers and by offering resume-building and interview preparation workshops.

Especially for students in educational programmes, UPSI offers support through the Centre for Teaching Practice and Industrial Training (Pusat Latihan Mengajar dan Industi; PULAMI). This centre is responsible for managing professional relationships with schools, educational institutes, public and private organizations to ensure the smooth implementation of the teaching in practise.

Apart from these centres, the academic staff members also assist the students through the academic advisory system. Each academic advisor is a member of the academic staff and is responsible for several students from her/his classes. He/she is the 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. Academic advisors are asked to meet at least three times per semester with their students. The experts consider the comprehensive advisory system as one of the strengths of the degree programmes.

In general, students stress that the teachers are open-minded, communicate well with them, take their opinions and suggestions into account, and changes are implemented if necessary.

Students who prepare their theses have a thesis supervisor, who is assigned to the student based on the chosen thesis topic. The role of the final project supervisor is to guide students in accomplishing their final project, e.g., to finish their research and complete their final project report.

All students at UPSI have access to MyGuru, the official learning management system (LMS) of UPSI. MyGuru has been in use since 2004. Students can see their profiles (study plan, academic transcript and grade point average/GPA, lecturer evaluation, course list, etc.) via this digital platform.

There is a Student Body Unit at UPSI, which is managed by the Personality Development Section under the Department of Student Affairs and Alumni. The Student Body Unit responsible for establishing student clubs and associations, which are divided into arts, sports, religious and other extra-curricular activities.

The experts 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.

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:

Approximately, 70 % of the university's budget are provided by the Malaysian government

and around 30 % are derived from tuition fees and other sources such as cooperations with companies or other institutions. Additional funds for research activities can be provided by the Malaysian government, but the teachers have to apply for them.

Universiti Pendidikan Sultan Idris has developed financial procedures that need to be followed by all Responsibility Centres (Pusat Tanggungjawab; PTj) including the Faculty of Science and Mathematics.

Tables 4 and 5 show the budget allocation for the Department of Biology and the Department of Physics from 2020 to 2024. This budget is divided into the department's needs in terms of travel expenses, supplies, services and maintenance to support teaching and learning activities, research, publication, and operations according to the established financial procedures.

Year	Total Funds in Malaysian Ringgit (MYR)	Total Funds in Euro (€)
2020	98,780	19368
2021	77,000	15097
2022	77,000	15097
2023	77,000	15097
2024	88,992	17449

Table 4: Budget Biology Department, Source: SAR UPSI

Year	Total Funds in Malaysian Ringgit (MYR)	Total Fund in Euro (€)
2020	98,780	19368
2021	77,000	15097
2022	77,000	15097
2023	87,000	17058

2024	98,992	19409

Table 5: Budget Physics Department, Source: SAR UPSI

The Bachelor's degree programmes Biology Education and Physics Education have been assigned rooms in the Faculty building to support its lecture activities. Lecture rooms are equipped with air conditioning and learning media such as televisions, beamers, and white-boards in order to facilitate the learning processes. Lecture activities are also carried out in the Biology Education and Physics Education Laboratories, where students gain practical experience in the field of teaching through carrying out mock teaching.

Tuanku Bainun Library uses the Integrated Library Management Utility System (ILMU) to enable access to the library's collection and efficient management of library resources. The library's collection information can be accessed through the internet WebOPAC or the Pustaka Knowledge Portal both on and off-campus. The library also subscribes to various online databases, e-books, and e-journals. These electronic resources can be accessed in the library or remotely, so that teachers and students can access current scientific papers, e-books, and journals.

During the audit, the experts visit the laboratories at the Faculty of Science and Mathematics. They notice that there are no bottlenecks due to missing equipment or a lacking infrastructure. The technical equipment for adequately teaching the students is available. Moreover, the experts learn during the audit that students can use and operate the instruments in the laboratories by themselves after being trained and instructed by lab supervisors. There are enough instruments and kits available so that the experiments are conducted in groups of two or three students.

The experts note that UPSI provides extensive room capacities for teaching and conducting research activities, e.g. for the final projects. It is very positive that UPSI has separate laboratories for each subject area taught, and all labs are well supported by technical assistants. The new multifunctional classrooms, in which modern digital tools can be used and lessons can be planned and simulated, are impressive. The equipment here is state of the art. For the Educational Labs equipment, as shown during the visit, is appropriate and said to correspond to school equipment. Thus students can be efficiently trained for the future practice at schools. This training of experimental practice and teaching should always be kept updated to school equipment reality and beyond so that students are well prepared for conducting experiments at schools. Another positive aspect is the opportunity to gain experience with extracurricular learning in biology directly on the campus, including the zoological museum and the Educational Forest.

The experts appreciate the impressive variety and size of the laboratories. The equipment with devices is good, but some of this equipment (e.g. modern microscopes and smart-boards) was recently purchased and must first prove itself in practice and should be used in teaching. Especially the modern facilities for interactively teaching biology and physics education are very suitable for an educational programme and allow for mock teaching in different situations (laboratory or class sessions) and can be recorded and analysed.

The provided budget allows the departments to conduct the study programmes as intended. The academic staff members emphasise that from their point of view, both Bachelor's programmes receive sufficient funding for teaching and learning activities. The students confirm this positive impression and state their satisfaction with the available resources.

Furthermore, there are several supporting facilities such as Mosque, Hospital, Student Dormitories, Cafeteria, Book Store, Sport Facilities, and Cultural Centre.

The experts judge the available funds, the technical equipment, the infrastructure, and the facilities (laboratories, library, seminar rooms etc.) to comply with the requirements for sustaining the degree programmes.

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

UPSI does not comment on this criterion in its statement

The experts consider criterion 3 to be fulfilled.

4. Transparency and documentation

Criterion 4.1 Module descriptions

Evidence:

- Self-Assessment Reports
- Module descriptions
- Homepage UPSI: https://www.upsi.edu.my/
- Homepage Faculty of Science and Mathematics: https://fsmt.upsi.edu.my/

Preliminary assessment and analysis of the experts:
Students and teachers have online access to the module descriptions (Course Proforma) via the UPSI Learning Management System MyGuru. The experts point out that it would be necessary to give all stakeholders access to the module descriptions. As external stakeholders e.g. employers cannot access MyGuru, UPSI should publish the module descriptions on the programme's homepage.

After studying the module descriptions, the experts confirm that they include all necessary information about the persons responsible for each module, the teaching methods and work load, the awarded credit points, the intended learning outcomes, the content, the applicability, the admission and examination requirements, and the forms of assessment and details explaining how the final grade is calculated.

Criterion 4.2 Diploma and Diploma Supplement

Evidence:

- Self-Assessment Report
- Sample Transcript of Records for each degree programme
- Sample Degree Certificate for each degree programme
- Sample Co-Curriculum Certificate for each degree programme

Preliminary assessment and analysis of the experts:
The experts confirm that all graduates are awarded a Degree Certificate, a Transcript of Records, and a Co-Curriculum Certificate. The Transcript of Records lists all the courses that the graduate has completed, the achieved credits, grades, and cumulative GPA.

However, the experts point out that no Diploma Supplement was submitted. The Co-Curriculum Certificate just list all extra-curricular activities of the student and, therefore, is no suitable substitute for a Diploma Supplement. For this reason, the experts expect that UPSI designs a Diploma Supplement, which should be aligned with the European template, to all students upon graduation. This way, graduates can better verify their acquired competences, especially if they want to apply for a job or admission to a Master's programme abroad. During the audit, the experts learn that a draft of a similar document called Malaysian qualification Statement (MQS) already exists but has not been adopted by UPSI yet. As the content and structure of the MQS is very similar to the European template of the Diploma Supplement, it could be easily adopted and issued to all graduates.

Criterion 4.3 Relevant rules

Evidence:

- Self-Assessment Reports
- 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 UPSI 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, the experts point out that there is no specific homepage for the Bachelor's degree programme Biology Education nor for the Bachelor's degree programme Physics Education. The information about the different degree programmes offered by FSM are just presented on the faculty's homepage. In addition, this homepage only mentions the intended learning outcomes of each programme and includes a link to the academic guidelines. The experts point out that the homepage should include all essential information about the respective degree programme, such as module descriptions and study plan. In addition, the academic guidelines only include the short synopsis and not the detailed module descriptions (course proforma) of each course. For this reason, the experts recommend to update the homepage accordingly. Best would be to have specific homepages for each degree programme offered by the Faculty of Science and Mathematics and to display all relevant information there.

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

The experts acknowledge that UPSI will have a specific homepage for each degree programme offered by the Faculty of Science and Mathematics and will display all relevant information about the respective degree programme (intended learning outcomes, study plan, module descriptions) there.

The experts expect to issue a Diploma Supplement, which is aligned with the European template, to all graduates and to submit sample Diploma Supplements in the further course of the procedure.

The experts consider criterion 4 to be mostly fulfilled.

5. Quality management: quality assessment and development

Evidence:

- Self-Assessment Reports
- UPSI Academic Management Handbook
- Discussions during the audit

Preliminary assessment and analysis of the experts:

The highest academic board at UPSI is the University Senate (US), which is headed by the Vice-Chancellor and responsible for implementing and supervising all academic processes at UPSI. The Dean is the Head of the Faculty of Science and Mathematics with the authority and responsibility for administering all teaching and learning activities within the faculty. Finally, there are the Heads of the Departments and for each degree programme there is the Head of Study Programme, who is responsible for implementing all educational activities within the respective degree programme.

The experts discuss the quality management system at UPSI with the programme coordinators. The experts learn that there is an institutional system of quality management aiming at continuously improving the degree programmes. This system relies on internal as well as external quality assurance. Internal quality assurance encompasses all activities focused on implementing measures for improving the teaching and learning quality at UPSI, while external quality assurance focuses on both national and international accreditations. Every degree programme and every Higher Education Institution in Malaysia has to be accredited by the Malaysian Quality Agency (MQA).

According to university regulations, the parties responsible for evaluating programmes and curricula at university level are the Board of Directors (LPU), the University Senate (SU), and the University Academic Planning Committee (JKPAU), whereas at the faculty level, the Faculty Academic Planning Committee (JKPAF) and Curriculum Planning Committee (JPK) are in charge of curriculum assessment. Finally, there is the Department Quality Committee, chaired by the Department Head, which holds regular management review meetings to assess the performance and achievement of the learning and teaching processes. These findings are then reported during the faculty-level management review meeting at faculty level, chaired by the Dean, followed by the management review meeting on university level, chaired by the Vice-Chancellor.

Revision of the degree programmes is done every four years. The curriculum review process is carried out at the faculty level involving input from external evaluators, who are

appointed by the faculty. The Curriculum Planning Committee, consisting of lecturers, programme coordinators, and department heads, will discuss regularly how to further develop the degree programme. The suggestions for improvement will be brought for approval to the Faculty of Science and Mathematics and the University Academic Planning Committee, University Senate, and University Board of Directors. The Dean is responsible for ensuring that all phases of review and approval are implemented to guarantee the quality of the programmes and that all requirements are met.

Satisfaction surveys to gather feedback from students are conducted online at the end of each semester. Students assess various aspects such as quality of course work, soft skills, planning, student involvement, teaching and learning methods, and course descriptions in each enrolled course. Giving feedback on the classes is compulsory for the students. This way, student can offer insights on the course content, lecturers, and their overall teaching and learning experience. This platform allows students to contribute feedback on the course's quality and its alignment with their learning requirements. This feedback is utilised for further development and enhancement of the degree programmes. Apart from that, UPSI adheres to an open door policy, where students can directly channel their complaints or suggestions to UPSI's management in case of problems. One example for changes in the degree programme is the fact that the teaching practise used to be conducted in two parts of eight weeks each. However, due to students' feedback this was changed and now the teaching practise is conducted in one go of 16 weeks.

Feedback is also obtained from students through an exit survey before they graduate. At the end of each semester, students are also required to fill out a learning evaluation form (satisfaction questionnaire) for each course online. UPSI conducts an exit survey every semester to get final year students' feedback on their learning experiences, facilities, and services received throughout their studies at UPSI. This survey is conducted online by the Center for Academic Development (PPA). The findings are discussed by the University Academic Planning Committee. Agreed proposals will be forwarded to the respective faculties and departments.

The experts point out that there should be a regular and institutionalised survey on students' workload in every course. For example, this could be done by including a respective question in the course questionnaires that students have to fill out at the end of each semester (see Criterion 1.4).

The results of the course questionnaires are discussed during the Management Review Meetings. However, the experts point out that it is necessary to close the feedback cycles and to directly inform the students about the results of the course questionnaires in every

course. This way, students can get first-hand information on any issues and on the measures planned to improve the situation.

The President of the Student Representative Council (YDP MPP) attends the Senate meeting as an invited member. Members of the Student Representative Council are elected by their fellow students. In the Faculty of Science and Mathematics, the same procedure is practiced by holding a vote among the students to elect the members of the Science Association and the Mathematics Student Association. Apart from that, students in each cohort appoint their own representatives to be members of the committees of the Student Associations.

However, the experts learn during the audit that students are not members of the boards at UPSI, neither on university or faculty level nor in programme or department level. Thus, students are not directly involved in the decision-making processes. 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 boards at UPSI at least on programme level and be actively involved in the decision-making processes for further developing the degree programmes. For example, it would be useful to make student representatives official members of the Curriculum Planning Committee and to include them in the management review meetings.

UPSI uses the Graduate Tracking Study System (SKPG) to monitor the employability of its graduates. This system enables UPSI to trace their career paths, such as pursuing teaching, further education, or entering different professional positions. The university organises upskilling programs from time to time to help the unemployed graduates to improve their skills and, thus, help them to find jobs. The experts learn during the audit that last year 94 % of the graduates of the Biology and Physics Education programmes found jobs as teachers, either at public or private schools. In general, the job perspectives of the graduates are very good as biology and physics teachers are in high demand and the graduates from UPSI have an excellent reputation.

The experts discuss with the representatives of UPSI'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 programmes. They learn that there is an advisory board at the faculty of Science and Mathematics with employers (from schools and companies) and representatives of public institutions as members. The advisory boards meets regularly to discuss the demands of the labour market with the FSM. The experts appreciate that UPSI stays in contact with its alumni and the employers. However, they notice that the communication with high school principals could be improved. Some are invited to give their feedback in

the surveys and two teachers are members of the advisory board, but overall the contact could be closer. As the experts consider the input of the high school principals to be very important for the further development of the educational programmes, they recommend to improve the communication with them by asking them regularly and directly about their suggestions on further developing the degree programmes in the area of science education.

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

The experts stress that it is necessary to close the feedback cycles and inform the students directly about the results of the course questionnaires. They appreciate that UPSI will enhance students' involvement on programme level.

The experts appreciate that starting early 2024, the Faculty of Science and Mathematics has appointed members of the Advisory Board among them alumni and employers. The Advisory Board will be involved in the programmes' review and their input will be used for improving the degree programmes. The experts emphasise that it is important that there is a frequent communication between the programme coordinators and the advisory board to ensure continuous input and collaboration in the further development of the degree programmes.

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 (16.07.2024)

UPSI provides the following statement:

Area	Comment/Suggestion	UPSI response
1.3 Curriculum	The employers from high schools suggest to improve students' communication and presentation skills as well as their competencies in classroom management and using digital teaching methods. The new interactive teaching labs are ideal for this purpose and should be used to this end. Additionally, employers noticed that graduates could im-prove their flexibility in using new assessment methods. This should be taken into con-sideration when teaching students on assessment methods and their suitability for dif-ferent teaching situation. Especially online and hybrid tools should be introduced. Final-ly, it would be useful to better align the practical experiments taught to students with the requirements of the high schools. As the experts learn during the audit, usually only four experiments are conducted in each practical course (e.g. optics) and this does not seem sufficient. For this reason, the experts suggest increasing the number of experiments in the practical courses as it will improve the graduates' experimental teaching abilities and it is always useful if teachers can present more experiments than just the minimum requirements.	We agree to this suggestion and therefore will look into improving: • Students' communication and presentation • Classroom management • Digital teaching methods • Interactive teaching lab • New assessment method • Online and hybrid tools • High school practical requirements
1.3 Curriculum	The number of available places in the mobility programmes is still limited and there are restrictions due to a lack of sufficient financial support. The lack of financial support hinders students from joining the outbound programmes.	We agree to this suggestion and will therefore strategize to enhance international mobility for our students.

	The experts understand these problems and recommend to increase the efforts to further internationalising UPSI by offering more places in international exchange programmes and more scholarships. For example, it would be possible to cooperate with international high schools abroad so that students can conduct their teaching practise there.	
1.3 Curriculum	It is also possible for students and teachers to apply to international organisations like the German Academic Exchange Council (DAAD) for receiving funds for stays abroad. In addition, FSM should invite more academics from renowned international universities as guest lecturers.	We agree to this suggestion and will enhance the international mobility either by student outbound or international lecturer inbound.
1.5 Work load and credits	Since the students' workload is based on the centralised requirements form MQA, the experts expect UPSI to re-evaluate the calculation of ECTS points by asking the students directly 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, UPSI would facilitate academic mobility and better support their graduates if they apply for international programmes. In any case, UPSI needs to verify the students' total workload and make sure that the ac-tual workload and the awarded ECTS points correspond with each other. This infor-mation should be made transparent in the module descriptions (course proforma) and the study plans. The experts confirm that both programmes have a high but manageable workload. Stu-dents can give their feedback on the courses and comment if they think that the work-load is too high. How-	The existing courses questionnaire has included some items to gather students' feedback on their study workload. Please refer to the highlighted items in the attached student questionnaire. We will also look into this matter to improve the measurement of students' workload. The equivalent ECTS point will be included in the programme structure. This information will be included in the programme homepage.

	ever, there should be a regular and institutionalised survey on stu-dents' workload in every course.	
4.1 Module descriptions	Students and teachers have online access to the module descriptions (Course Proforma) via the UPSI Learning Management System MyGuru. The experts point out that it would be necessary to give all stakeholders access to the module descriptions. As external stakeholders e.g. employers cannot access MyGuru, UPSI should publish the module descriptions on the programme's homepage.	We agree to this suggestion and will include the module description on the programme's homepage.
4.2 Diploma and Diploma Supplement	However, the experts point out that no Diploma Supplement was submitted. The Co-Curriculum Certificate just list all extra-curricular activities of the student and, there-fore, is no suitable substitute for a Diploma Supplement. For this reason, the experts expect that UPSI designs a Diploma Supplement, which should be aligned with the Eu-ropean template, to all students upon graduation. This way, graduates can better veri-fy their acquired competences, especially if they want to apply for a job or admission to a Master's programme abroad. During the audit, the experts learn that a draft of a similar document called Malaysian qualification Statement (MQS) already exists but has not been adopted by UPSI yet. As the content and structure of the MQS is very similar to the European template of the Diploma Supplement, it could be easily adopt-ed and issued to all graduates.	We agree to this comment and will comply to the requirement of providing diploma supplement (according to MQS) for our graduates.
4.3 Relevant rules	However, the experts point out that there is no specific homepage for the Bachelor's de-gree programme Biology Education nor for the Bachelor's degree programme Physics Ed-ucation. The information about the different degree programmes offered by FSM are just presented on the faculty's homepage. In addition, this homep-	We agree to this comment and will comply to improve our website.

	age only mentions the in-tended learning outcomes of each programme and includes a link to the academic guide-lines. The experts point out that the homepage should include all essential information about the respective degree programme, such as module descriptions and study plan. In addition, the academic guidelines only include the short synopsis and not the detailed module descriptions (course proforma) of each course. For this reason, the experts rec-ommend to update the homepage accordingly.	
5. Quality Management	The results of the course questionnaires are discussed during the Management Review Meetings. However, the experts point out that it is necessary to close the feedback cycles and to directly inform the students about the results of the course questionnaires in every course. This way, students can get first-hand information on any issues and on the measures planned to improve the situation.	We agree to this suggestion and will enhance students' involvement at the programme level.
5. Quality Management	However, the experts learn during the audit that students are not members of the boards at UPSI, neither on university or faculty level nor in programme or department level. Thus, students are not directly involved in the decision-making processes. 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 boards at UPSI at least on programme level and be actively involved in the decision-making processes for further developing the degree programmes. For example, it would be useful to make student representatives official members of the Curriculum Planning Committee and to include them in the management review meetings.	We agree to this suggestion and will enhance students' involvement at the programme level.

5. Quality Management	The experts appreciate that UPSI stays in contact with its alumni and employers. However, they notice that the communication with high school principals could be improved. Some are invited to give their feedback in the surveys and two teachers are members of the advisory board, but overall the contact could be closer. As the experts consider the input of the high school principals to be very important for the further development of the educational programmes, they recommend to improve the communication with them by asking them regularly and directly about their suggestions on further developing the degree programmes in the area of science education.	Starting early 2024, the Faculty of Science and Mathematics had appointed Advisory Board Members among the alumni and employers. The Advisory Board Members involve in the program review and their inputs will be used to improve the program.

F Summary: Expert recommendations (20.08.2024)

Taking into account the additional information and the comments given by UPSI, 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
Ba Biology Education	With requirements for one year	-	30.09.2029
Ba Physics Education	With requirements for one year	-	30.09.2029

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload and adjust the awarded ECTS points accordingly.

A 2. (ASIIN 4.2) Award a Diploma Supplement, which is aligned with the European template, to all graduates.

A 3. (ASIIN 5) Close the feedback cycles and inform the students directly about the results of the course questionnaires.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to improve students' communication and presentation skills as well as their competencies in classroom management and in using digital teaching methods.

E 2. (ASIIN 1.3) It is recommended to further promote the students' academic mobility and to establish more international cooperations.

E 3. (ASIIN 1.5) It is recommended to include a more specific question on the students' total workload in the satisfaction questionnaires.

E 4. (ASIIN 4.3) It is recommended to have a specific homepages for each degree programme offered by the Faculty of Science and Mathematics and to display all relevant in-formation (intended learning outcomes, study plan, module descriptions) there.

E 5. (ASIIN 5) It is recommended to improve the communication with high school principals and to ask them regularly about their suggestions on further developing the degree programmes.

E 6. (ASIIN 5) It is recommended to make student representatives members of the programme review panel in order to directly involve them in the decision making processes for further developing the degree programmes.

G Comment of the Technical Committees (13.09.2024)

Technical Committee 10 – Life Sciences (11.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee sees that the expert group wants to impose three requirements. These relate to the correct allocation of ECTS points, the Diploma Supplement and feedback to students on the results of teaching evaluations. In addition, six recommendations are to be made concerning the improvement of academic mobility, the homepages of the degree programmes, quality assurance, communication with school head masters, and soft skills. The Technical Committee only makes one grammatical correction to recommendation E4, otherwise it agrees with the proposed requirements and recommendations.

The Technical Committee 10 – Life Sciences recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology Education	With requirements for one year	-	30.09.2029

E 4. (ASIIN 4.3) It is recommended to have a specific homepages for each degree programme offered by the Faculty of Science and Mathematics and to display all relevant in-formation (intended learning outcomes, study plan, module descriptions) there.

Technical Committee 13 – Physics (13.09.2024)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and follows the experts' assessment with some wording changes in E3 and E5.

The Technical Committee 13 – Physics recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Physics Education	With requirements for one year	-	30.09.2029

E 3. (ASIIN 1.5) It is recommended to include a more specific question on the students' total workload in the course questionnaires.

E 5. (ASIIN 5) It is recommended to improve the communication with high school teachers and to ask them regularly about their suggestions on further developing the degree programmes.

H Decision of the Accreditation Commission (24.09.2024)

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

The Accreditation Commission discusses the procedure and the proposed changes of the Technical Committees. The AC decides to change the wordings of recommendations E3 and E5 in order to make clear that the university should stay in close contact with teachers and principals.

The Accreditation Commission decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Biology Education	With requirements for one year	-	30.09.2030
Ba Physics Education	With requirements for one year	-	30.09.2030

Requirements

For all degree programmes

A 1. (ASIIN 1.5) Verify the students' total workload and adjust the awarded ECTS points accordingly.

A 2. (ASIIN 4.2) Award a Diploma Supplement, which is aligned with the European template, to all graduates.

A 3. (ASIIN 5) Close the feedback cycles and inform the students directly about the results of the course questionnaires.

Recommendations

For all degree programmes

E 1. (ASIIN 1.3) It is recommended to improve students’ communication and presentation skills as well as their competencies in classroom management and in using digital teaching methods.

E 2. (ASIIN 1.3) It is recommended to further promote the students’ academic mobility and to establish more international cooperations.

E 3. (ASIIN 1.5) It is recommended to include a more specific question on the students' total workload in the course questionnaires.

E 4. (ASIIN 4.3) It is recommended to have a specific homepage for each degree programme offered by the Faculty of Science and Mathematics and to display all relevant in-formation (intended learning outcomes, study plan, module descriptions) there.

E 5. (ASIIN 5) It is recommended to improve the communication with high school teachers and principals and to ask them regularly about their suggestions on further developing the degree programmes.

E 6. (ASIIN 5) It is recommended to make student representatives members of the programme review panel in order to directly involve them in the decision making processes for further developing the degree programmes.

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 Bachelor's degree programme Biology Education:

Programme Educational Objectives (PEO):

PEO1	Knowledgeable and master professional skills in the field of education and biology to meet current needs. (PLO 1 & PLO 2)
PEO2	Ability to teach and manage the teaching and learning of biology at the high school, pre-university and diploma levels. (PLO 3, PLO 5 & PLO 6)
PEO3	Knowledgeable and skilled in conducting and managing educational and biological research. (PLO 7, PLO 11)
PEO4	Able to contribute to self-development and community. (PLO 4, PLO 8, PLO 9)
PEO5	Able to showcase entrepreneurial characteristics in everyday life. (PLO 10)

Programme Learning Outcomes (PLO):

PLO1	Describe theoretical and technical knowledge in education and biology
PLO2	Demonstrate intellectual ability through the application of thinking skills related to the fields of education and biology.
PLO3	Apply appropriate methods and practical skills for the implementation of tasks in the field of education and biology.
PLO4	Interact effectively using effective interpersonal skills.
PLO5	Communicate in writing and orally through a variety of delivery media.
PLO6	Integrate various media sources and digital technologies to complete tasks.
PLO7	Apply numeracy skills in problem solving.
PLO8	Demonstrates leadership, autonomy and accountability at various levels of management.
PLO9	Demonstrate self-improvement through continuous learning and professional development proactively.
PLO10	Demonstrate entrepreneurial thinking and skills in project management.
PLO11	Adhere to a code of ethics in social environment and professional practice.

The following **curriculum** is presented:

SEMESTER 1				
NO	**CODE**	**COURSE NAME**	**CREDIT**	**ECTS**
1	UPU3112 UBM3142	Falsafah dan Isu Semasa *Philosophy and current issues* Bahasa Melayu Komunikasi 1 *Malay language communication 1*	2 2	3.2 3.2
2	KPF3012	Perkembangan Pendidikan di Malaysia: Falsafah dan Dasar *Education Development in Malaysia: Philosophy & Policy*	2	3.2
7	SBC3053	Animal Anatomy and Histology	3	4.8
4	SBC 3013	Cell Biology	3	4.8
5	SBB 3053	Biodiversity	3	4.8
6	SBV 3013	Ecology	3	4.8
		TOTAL	**16**	**25.6**
SEMESTER 2				
NO	**CODE**	**COURSE NAME**	**CREDIT**	**ECTS**
1	UPU3312 UPU3322	Pengajian Kenegaraan *Nationhood studies* Warisan Seni dan Kebudayaan Malaysia *Malaysian Art and Cultural Heritage*	2 2	3.2 3.2
2	UBM3262 UBM3362	Keterampilan Wacana Bahasa Melayu *Malay Discourse Skills* Bahasa Melayu Komunikasi 2 *Malay language communication 2*	2 2	3.2 3.2

3	UPU3122	Penghayatan Etika dan Peradaban *Appreciation of Ethics and Civilization*	2	3.2
4	KPS3023	Sosiologi Pendidikan *Sociology of Education*	3	3.2
5	CP…	Kokurikulum komponen kelab/persatuan *Cocurriculum component club/society*	1	1.6
6	SBC3063	Plant Anatomy and Morphology	3	4.8
7	SBB3033	Principles of Microbiology	3	4.8
		TOTAL	**16**	**25.6**

SEMESTER 3				
NO	**CODE**	**COURSE NAME**	**CREDIT**	**ECTS**
1	KPP3023	Psikologi dalam Pendidikan *Psychology of Education*	3	4.8
2	UPU3222	Budaya keusahawanan *Entrepreneurial Culture*	2	3.2
3	UBI3352	Essential English 1	2	3.2
4	CU…	Kokurikulum komponen Unit Beruniform *Cocurriculum component uniform unit*	1	1.6
5	SBC3043	Developmental Biology	3	4.8
6	SBU3033	Genetics	3	4.8
7	***	Minor 1	3	4.8
8	***	Bahasa Asing Peringkat 1 *Foreign language level 1*	2	3.2
		TOTAL	**19**	**30.4**

SEMESTER 4				
NO	**CODE**	**COURSE NAME**	**CREDIT**	**ECTS**
1	UBI3262	Essential English 2	2	3.2

2	KPK3012	Pendidikan Inklusif *Inclusive education*	2	3.2
3	CS…	Kokurikulum komponen Sukan *Cocurriculum component Sport*	1	1.6
4	SBK3013	Principles in Biochemistry	3	4.8
5	SBT3023	Principles of Biotechnology	3	4.8
7	***	Minor 2	3	4.8
8	***	Minor 3	3	4.8
9	***	Bahasa Asing Peringkat 2 *Foreign language level 2*	2	3.2
		TOTAL	**19**	**30.4**

SEMESTER 5				
NO	**CODE**	**COURSE NAME**	**CREDIT**	**ECTS**
1	KPD3036	Rekabentuk, Pentaksiran dan Teknologi Pengaja-ran *Design, Assessment and Teaching Technology*	6	9.6
2	KPG3013	Insan Guru Profesional *Professional teachers*	3	4.8
3	UPU3342	Integriti dan Anti Rasuah *Integrity and Anti-Corruption*	2	3.2
4	SBF3014	Physiological Processes in Animals	4	6.4
5	SPR3003	Educational Research Method	3	4.8
6	***	Bahasa Asing Peringkat 3 *Foreign language level 3*	2	3.2
		TOTAL	**20**	**32**

SEMESTER 6				
NO	**CODE**	**COURSE NAME**	**CREDIT**	**ECTS**
1	SBF3053	Physiological processes in plants	3	4.8

2	SBR 3913	Projek Penyelidikan Akhir (I) *Final year project (1)*	3	4.8
3	***	Minor 4	3	4.8
4	***	Minor 5	3	4.8
5	***	Minor 6	3	4.8
6	KPR3072	Perantis guru (4 minggu semasa cuti semester) *Apprentice teacher (4 weeks during semester break)*	2	3.2
		TOTAL	**17**	**27.2**

SEMESTER 7				
NO	**CODE**	**COURSE NAME**	**CRE-DIT**	**ECTS**
1	SBP3013	Pelaksanaan Pengajaran Biologi *Implementation of Biology Teaching*	3	4.8
2	***	Pelaksanaan Pengajaran Minor *Implementation of Minor Teaching*	3	4.8
3	SBR 3923	Projek Penyelidikan Akhir (II) *Final year project (II)*	3	4.8
4	***	Minor 7	3	4.8
5	***	Elektif Bebas *Open elective*	3	4.8
		TOTAL	**15**	**24**

SEMESTER EIGHT				
NO	**CODE**	**COURSE NAME**	**CRE-DIT**	**ECTS**
1	KPR3068	Latihan Mengajar –16 minggu Teaching Practice - 16 weeks	8	12.8
2	KPR3012	Seminar refleksi latihan mengajar	2	3.2

		Teaching Practice Reflection Seminar		
		TOTAL	**10**	**16**

*Courses in red are taken by international students

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Physics Education:

Programme Educational Objectives (PEO)

PEO1: Knowledge and master professional skills in the field of education and physics to meet current needs (PLO1, PLO2).

PEO2: Ability to teach and manage the teaching and learning of physics at the high school, pre-university, and diploma levels (PLO3, PLO5, and PLO6).

PEO3: Knowledgeable and skilled in conducting and managing educational and physics research (PLO7, PLO11).

PEO4: Able to contribute to self-development and community (PLO4, PLO8, PLO9).

PEO5: Able to showcase entrepreneurial characteristics in everyday life (PLO10).

Program Learning Outcomes (PLO)

PLO1: Describe theoretical and technical knowledge in education and physics.

PLO2: Demonstrate intellectual abilities through the application of thinking skills related to the fields of education and physics.

PLO3: Apply appropriate methods and practical skills for the implementation of tasks in the fields of education and physics.

PLO4: Interact effectively using efficient interpersonal skills.

PLO5: Communicate in writing and orally through a variety of delivery media.

PLO6: Integrate various media sources and digital technologies to complete tasks.

PLO7: Apply numeracy skills in problem solving.

PLO8: Demonstrate leadership, autonomy, and accountability at various levels of management.

PLO9: Demonstrate self-improvement through continuous learning and professional development proactively.

PLO10: Demonstrate entrepreneurial thinking and skills in project management.

PLO11: Adhere to code of ethics in social environments and professional practices.

The following **curriculum** is presented:

SEMESTER 1

Code	Courses Name	Credit	ECTS
KPF3012	Perkembangan Pendidikan di Malaysia: Falsafah dan Dasar (Education Development in Malaysia: Philosophy & Policy)	2	3.2
UPU3112/ *UBM3142	Falsafah dan Isu Semasa (Philosophy and Current Issues) / *Bahasa Melayu Komunikasi 1(*Malay Language Communication 1)	2	3.2
SFT3033	Mechanics	3	4.8
SFT3013	Electromagnetism	3	4.8
SFU3073	Astronomy	3	4.8
SFT3113	Mathematics for Physics	3	4.8
	Total	**16**	**25.6**

*Courses for international students only

SEMESTER 2

Code	Courses Name	Credit	ECTS
KPS3023	Sosiologi Pendidikan (Sociology of Education)	3	4.8
UBI3252	Essential English 1	2	3.2
UBM3262/ *UBM3362	Keterampilan Wacana Akademik Bahasa Melayu (Malay Discourse Skills) / *Bahasa Melayu Komunikasi 2 (*Malay Language Communication 2)	2	3.2
UPU3122	Penghayatan Etika dan Peradaban (Appreciation of Ethics and Civilization)	2	3.2
SFT3023	Vibrations, Waves and Optics	3	4.8
SFG3023	Thermodynamics	3	4.8
SFE3053	Electronics	3	4.8
CP…	Kokurikulum komponen kelab/persatuan (Co-Curriculum: Club/Society)	1	1.6
	Total	**19**	**30.4**

*Courses for international students only.

SEMESTER 3

Code	Courses Name	Credit	ECTS
UPU3312 / UPU3322*	Pengajian Kenegaraan (Nationhood Studies) / *Warisan Seni dan Kebudayaan	2	3.2

	Malaysia (*Malaysia's Art and Cultural Heritage)		
KPP3023	Psikologi dalam Pendidikan (Psychology in Education)	3	4.8
UBI3262	Essential English 2	2	3.2
CU..	Kokurikulum komponen Unit Beruniform (Co-Curriculum: Uniform unit)	1	1.6
…	Bahasa Asing Peringkat 1 (Foreign Languages Level 1)	2	3.2
SFE3043	Computer Programming & Interfacing	3	4.8
SFT3063	Mathematical Physics	3	4.8
xxxx	Minor 1	3	4.8
	Total	**19**	**30.4**

*Courses for international students only.

SEMESTER 4

Code	Courses Name	Credit	ECTS
KPK3012	Pendidikan Inklusif (Inclusive Education)	2	3.2
UPU3222	Budaya Keusahawanan (Entrepreneurial Culture)	2	3.2
CS..	Kokurikulum komponen sukan (Co-Curriculum: Sport)	1	1.6
	Bahasa Asing Peringkat 2 (Foreign Languages Level 2)	2	3.2
SFU3063	Special Topics In Physics	3	4.8
SFT3053	Solid State Physics	3	4.8
Xxxx	Minor 2	3	4.8
Xxxx	Minor 3	3	4.8
	Total	**19**	**30.4**

SEMESTER 5

Code	Courses Name	Credit	ECTS
KPD3036	Rekabentuk, Pentaksiran dan Teknologi Pengajaran (Design, Assessment and Teaching Technology)	6	9.6
KPG3013	Insan Guru Profesional (Professional Teachers)	3	4.8
UPU2342	Integriti dan Anti Rasuah (Integrity and Anti-Corruption)	2	3.2
	Bahasa Asing Peringkat 3 (Foreign Languages Level 3)	2	3.2
SPR3003	Kaedah Penyelidikan Pendidikan (Educational Research Methods)	3	4.8

Xxxx	Minor 4	3	4.8
	Total	**19**	**30.4**

SEMESTER 6

Code	Courses Name	Credit	ECTS
KPR3072	Perantis Guru (Teacher Apprentice)	2	3.2
SFR3913	Final Year Project 1	3	4.8
SFT3093	Modern & Quantum Physics	3	4.8
Xxxx	Minor 5	3	4.8
Xxxx	Minor 6	3	4.8
Xxxx	Open Elective	3	4.8
	Total	**17**	**27.2**

SEMESTER 7

Code	Courses Name	Credit	ECTS
SFR3923	Final Year Project 2	3	4.8
SFT3103	Nuclear & Particle Physics	3	4.8
xxxx	Pelaksanaan Pengajaran Fizik (Implementation of Physics Teaching)	3	4.8
xxxx	Pelaksanaan Pengajaran Minor (Implementation of Minor Teaching)	3	4.8
xxxx	Minor 7	3	4.8
	Total	**15**	**24.0**

SEMESTER 8

Code	Courses Name	Credit	ECTS
KPR3068	Latihan Mengajar (Teaching Practice)	8	12.8
KPR3012	Seminar Refleksi Latihan Mengajar (Teachning Practice Reflection Seminar)	2	3.2
	Total	**10**	**16.0**