



ASIIN Certification Report

Associate Degree Programmes
Electrical and Electronics Technology
Biomedical Equipment Technology

Higher Diploma Programmes
Electrical and Electronics Technology
Biomedical Equipment Technology

Provided by
**School of Computing and Technology, Eastern Medi-
terranean University (North Cyprus)**

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A About the Certification Process

Title of the Associate / Higher Diploma Programmes	Previous certification
Associate Degree in Electrical and Electronics Technology	02.12.2015, ASIIN
Higher Diploma in Electrical and Electronics Technology	02.12.2015, ASIIN
Associate Degree in Biomedical Equipment Technology	02.12.2015, ASIIN
Higher Diploma in Biomedical Equipment Technology	02.12.2015, ASIIN
<p>Date of the contract: 17.07.2020</p> <p>Submission of the final version of the self-assessment report: 16.10.2020</p> <p>Date of the onsite visit: 07.–14.12.2020</p> <p>at: Remote Audit</p>	
<p>Peer panel:</p> <p>Prof. Dr. Madhu Chandra, Technical University of Chemnitz; Dr.-Ing. Alfred Schulte, Bosch Group; Dominik Kubon, Student peer from Technical University of Aachen</p>	
<p>Representative of the ASIIN headquarter: Dr. Siegfried Hermes</p>	
<p>Responsible decision-making committee: Certification committee</p>	
<p>Criteria used:</p> <p>Standards for the Certification of (Further) Education and Training for courses and modules related to Computer Sciences, Technology, Natural Sciences and Business Economics as of 26.06.2020.</p> <p>European Standards and Guidelines for Quality Assurance in the European Higher Education Area as of 15 May 2015.</p>	

A About the Certification Process

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

B Characteristics of the Degree Programmes

a) Name of the course	b) Degree awarded upon conclusion	c) Corresponding level of the European Qualifications Framework	d) Mode of Study	e) Duration & Credit Points	f) First time of offer & Intake rhythm	g) Number of students per intake	h) Fees
Electrical and Electronics Technology	Associate Degree	5	Full time	4 Semesters 120 ECTS 71 EMU credits	Fall 2000/2001 Fall semester / Spring semester	15 / Fall semester 3 / Spring semester	To be determined annually
Electrical and Electronics Technology	Higher Diploma	5	Full time	6 Semesters 180 ECTS 71 + 18 EMU credits	Fall 2000/2001 Fall semester / Spring semester	12 / Fall semester 3 / Spring semester	To be determined annually
Biomedical Equipment Technology	Associate Degree	5	Full time	4 Semesters 120 ECTS 62 EMU	Fall 2010/2011 Fall semester / Spring semester	5 / Fall semester 2 / Spring semester	To be determined annually
Biomedical Equipment Technology	Higher Diploma	5	Full time	6 Semesters 180 ECTS 62 + 21 EMU credits	Fall 2010/2011 Fall semester / Spring semester	3 / Fall semester 1 / Spring semester	To be determined annually

For the Associate Degree Programme Electrical and Electronics Technology the self-assessment report (henceforth SAR) states the following **intended learning outcomes**:

- “• Graduates have up-to date fundamental theoretical and practical knowledge in EET field;
- Graduates can use all practical skills and also basic theoretical methods and techniques in the EET field;
- Graduates can utilize algorithmic thinking and planning approaches in their applications;
- Graduates can design and implement electrical installation for small and medium size projects;
- Graduates can understand the generation, transmission and distribution of electricity;
- Graduates can understand the electrical installation project reading and recognition of the symbols used;
- Graduates can use different hardware and software components in a computer system;

B Characteristics of the Degree Programmes

- Graduates can describe basics about information technologies;
- Graduates can understand and design Logic Circuit Functions, Flip Flop Circuits, Counters and Shift registers;
- Graduates can design electronic circuits with computer;
- Graduates can understand single phase and three-phase motors structure”.

In addition, the following learning outcomes are laid down for the Higher Diploma degree programme in Electrical and Electronics Technology:

- “• Graduates gain advanced practical application skills;
- Graduates have enhanced theoretical knowledge and understanding of the field;
- Graduates are equipped with the latest know-how and are readily employable;
- Graduates form a professional network in their field”.

The following **curriculum** is presented for the Associate Degree Programme:

First Year Fall Semester (18/71 Credits, 25/120 ECTS) Birinci Yıl Güz Dönemi (18/71 Kredi, 25/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ENGL161	32711	Basic English I / Temel İngilizce I	(3,0,1) 3	4	UC	-
MATE117	32712	Mathematics for Electronic Technicians / Elektronik Teknisyenliği Matematiği	(3,0,1) 3	5	UC	-
EETE111	32713	Vocational Orientation / Mesleki Yönlendirme	(3,0,0) 3	4	AC	-
EETE143	32714	Electrotechnology / Elektroteknik	(2,3,0) 3	5	AC	-
EETE101	32715	Introduction to Computing / Bilgisayar Giriş	(2,2,0) 3	3	AC	-
EETE113	32716	Properties of Electronic Materials / Elektronik Malzeme Özellikleri	(3,0,0) 3	4	AC	-

First Year Spring Semester (18/71 Credits, 25/120 ECTS) Birinci Yıl Bahar Dönemi (18/71 Kredi, 25/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ENGL162	32721	Basic English II / Temel İngilizce II	(3,0,1) 3	4	UC	ENGL161
EETE132	32722	Electronics - I / Elektronik I	(2,3,0) 3	5	AC	
EETE134	32723	Digital Electronics / Sayısal Elektronik	(3,1,0) 3	4	AC	
EETE152	32724	Computer Applications / Bilgisayar Uygulamaları	(2,3,0) 3	4	AC	EETE101

EETE162	32725	Electrical Instalation I / Elektrik Tesisat I	(2,4,0) 3	4	AC	
AE01	32726	Technical Elective / Teknik Seçmeli	(3,0,0) 3	4	AE	

B Characteristics of the Degree Programmes

Second Year Fall Semester (18/71 Credits, 40/120 ECTS) İkinci Yıl Güz Dönemi (18/71 Kredi, 40/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
EETE271	32731	Occupational Terminology / Mesleki Terminoloji	(3,0,1) 3	4	AC	
EETE231	32732	Electronics II / Elektronik II	(2,3,0) 3	5	AC	EETE132
EETE233	32733	Microprocessors / Mikroişlemciler	(3,1,0) 3	5	AC	EETE134
EETE261	32734	Electrical Installation II / Elektrik Tesisat II	(2,3,0) 3	6	AC	EETE162
EETE263	32735	Electrical Machines And Domestic Equipment / Elektrik Makineleri ve Ev Aletleri	(2,3,0) 3	6	AC	EETE143
AE02	32736	Technical Elective / Teknik Seçmeli	(3,0,0) 3	4	AE	
EETE200	32737	Yaz Stajı / Summer Practice	(0,0,0)0	10	AC	

Second Year Spring Semester (17/71 Credits, 30/120 ECTS) İkinci Yıl Bahar Dönemi (17/71 Kredi, 30/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
EETE232	32742	Electronics III / Elektronik III	(2,3,0) 3	6	AC	EETE231
EETE234	32743	Electronic Workshop / Elektronik Atölye	(2,2,0) 3	5	AC	EETE132
EETE262	32744	Electrical Installation III / Elektrik Tesisat III	(2,3,0) 3	6	AC	EETE261
EETE264	32745	Introduction To Computer Hardware / Bilgisayar Donanımına Giriş	(2,3,0) 3	5	AC	EETE152
AE03	32746	Technical Elective / Teknik Seçmeli	(3,0,0) 3	6	AE	
HIST280	32747	Atatürk's Principles And History Of Turkish Reforms / Atatürk İlkeleri ve İnkılap Tarihi	(2,0,0) 2	2	UC	

In addition, for the Higher Diploma Electrical and Electronics Technology programme the following curriculum is presented:

Third Year Fall Semester (15/18 Credits, 30/60 ECTS) Üçüncü Yıl Güz Dönemi (15/18 Kredi, 30/60 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ELET311	39751	Microprocessor Applications / Mikroişlemci Uygulamaları	(2,3,0) 3	6	AC	
ELET313	39752	Industrial Electronics / Endüstriyel Elektronik	(2,3,0) 3	6	AC	
ELET315	39753	Industrial Electronics / Endüstriyel Elektronik	(2,3,0) 3	6	AC	
ELET317	39754	Computer Hardware Application / Bilgisayar Donanım Uygulamaları	(2,3,0) 3	6	AC	
AE 04	39755	Technical Elective / Teknik Seçmeli	(3,0,0) 3	6	AE	

Third Year Spring Semester (3/18 Credit, 30/60 ECTS) Üçüncü Yıl Bahar Dönemi (3/18 Kredi, 30/60 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ELET302	39761	Industrial Training in Industry / Endüstride Staj	(0,0,0) 0	20	AC	
ELET304	39762	Graduation Project / Mezuniyet Projesi	(0,0,0)3	10	AC	

AC = Area Course(Alan Dersi) AE = Area Elective(Alan Seçmeli) UC = University Core (Üniversite Dersi)

B Characteristics of the Degree Programmes

For the Associate Degree Programme Biomedical Equipment Technology the self-assessment report states the following **intended learning outcomes**:

“Graduates use theoretical and practical knowledge and skills to analyse, troubleshoot, and maintain systems and devices used in the biomedical equipment industry.

- Graduates repair systems and equipment by applying logic and knowledge to solve problems associated with biomedical equipment technology.
- Graduates can apply acquired skills and learn new skills by engaging in lifelong learning
- Graduates can work as a productive and responsible team member.
- Graduates can adapt to changing business requirements by using their practical skills.
- Graduates have improved skills in oral and written communication in the biomedical technology field.
- Graduates have Basic English knowledge in oral and written communication.
- Graduates are aware of the importance of use of professional ethics in the BET field.”

In addition, the following learning outcomes are laid down for the Higher Diploma degree programme in Biomedical Equipment Technology:

- “• Graduates gain advanced practical application skills
- Graduates have enhanced theoretical knowledge and understanding of the field
 - Graduates are equipped with the latest know-how and are readily employable
 - Graduates form a professional network in their field”.

The following curriculum is presented for the Associate Degree programme in Biomedical Equipment Technology:

B Characteristics of the Degree Programmes

First Year Fall Semester (18/70 Credits, 25/120 ECTS) Birinci Yıl Güz Dönemi (18/70 Kredi, 25/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ENGL161	3D711	Basic English I / Temel İngilizce I	(3,0,1) 3	4	UC	
MATE117	3D712	Mathematics for Electronic Technicians / Elektronik Teknisyenliği Matematiği	(3,0,1) 3	5	UC	
BMET111	3D713	Anatomy And Physiology / Anatomi ve Fizyoloji	(3,0,0) 3	4	AC	
EETE143	3D714	Electrotechnology / Elektroteknik	(2,3,0) 3	5	AC	
EETE101	3D715	Introduction to Computing / Bilgisayar Giriş	(2,2,0) 3	3	AC	
EETE113	3D716	Properties of Electronic Materials / Elektronik Malzeme Özellikleri	(3,0,0) 3	4	AC	

First Year Spring Semester (18/70 Credits, 25/120 ECTS) Birinci Yıl Bahar Dönemi (18/70 Kredi, 25/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ENGL162	3D721	Basic English II / Temel İngilizce II	(3,0,1) 3	4	UC	ENGL161
EETE132	3D722	Electronics - I / Elektronik I	(2,3,0) 3	5	AC	
EETE134	3D723	Digital Electronics / Sayısal Elektronik	(3,1,0) 3	4	AC	
EETE152	3D724	Computer Applications / Bilgisayar Uygulamaları	(2,3,0) 3	4	AC	EETE101
BMET112	3D725	Medical Instrumentation - I / Tibbi Enstrümantasyon I	(3,1,0) 3	4	AC	
BMET168	3D726	Medical Communication / Medikal İletişim	(3,0,0) 3	4	AC	

Second Year Fall Semester (18/70 Credits, 40/120 ECTS) İkinci Yıl Güz Dönemi (18/70 Kredi, 40/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
EETE231	3D732	Electronics II / Elektronik II	(2,3,0) 3	5	AC	EETE132
EETE233	3D733	Microprocessors / Mikroişlemciler	(3,1,0) 3	5	AC	EETE134
BMET251	3D734	Medical Instrumentation II / Tibbi Enstrümantasyon II	(3,1,0) 3	5	AC	BMET112
BMET252	3D735	Fault Analysis in Biomedical Systems / Biyomedikal Sistemlerde Arıza Analizi	(3,1,0) 3	5	AC	
BMET253	3D736	Medical Imaging Systems / Tibbi Görüntüleme Sistemleri	(3,0,0) 3	5	AC	
EETE271	3D737	Occupational Terminology / Mesleki Terminoloji	(3,0,1) 3	5	AC	
BMET200	3D738	Summer Practice / Yaz Stajı	(0,0,0) 0	10	AC	

Second Year Spring Semester (8/70 Credits, 30/120 ECTS) İkinci Yıl Bahar Dönemi (8/70 Kredi, 30/120 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
BMET262	3D741	Biomedical Signal Processing / Biyomedikal İşaretlerin İşlenmesi	(2,3,0) 3	8	AC	EETE231
BMET264	3D742	Medical Applications / Tibbi Uygulamalar	(0,0,0) 3	20	AC	
HIST280	3D747	Atatürk's Principles And History Of Turkish Reforms / Atatürk İlkeleri ve İnkılap Tarihi	(2,0,0) 2	2	UC	

B Characteristics of the Degree Programmes

In addition, the Higher Diploma programme in Biomedical Equipment Technology consists of the following curriculum:

Third Year Fall Semester (15/21 Credits, 30/60 ECTS) Üçüncü Yıl Güz Dönemi (15/21 Kredi, 30/60 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
ELET311	3M751	Microprocessor Applications / Mikroislemci Uygulamaları	(2,3,0) 3	6	AC	
ELET315	3M752	Industrial Electronics / Endüstriyel Elektronik	(2,3,0) 3	6	AC	
BMET301	3M753	Laser and Medical Applications / Lazer ve Tıpta Uygulamaları	(3,0,0) 3	6	AC	
BMET303	3M754	Hospital Organization And Management / Hastane Organizasyonu ve Yönetimi	(2,3,0) 3	6	AC	
AE01	3M755	Technical Elective / Teknik Seçmeli	(3,0,0) 3	6	AE	

Third Year Spring Semester (6/21 Credit, 30/60 ECTS) Üçüncü Yıl Bahar Dönemi (6/21 Kredi, 30/60 AKTS)						
Course Code / Ders Kodu	Ref. Code / Ref. Kodu	Course Name / Ders Adı	Credit / Kredi	ECTS / AKTS	Category / Kategori	Prerequisite(s) / Önkoşul
BMET302	3M761	Medical Training /Dönem Stajı	(0,0,0) 0	20	AC	
BMET304	3M762	Laboratory Support Equipment / Laboratuvar Destek Cihazları	(3,0,0)3	5	AC	
BMET306	3M763	Diagnosis and Tracking Devices / Teşhis ve Takip Cihazları	(3,0,0)3	5	AC	

AC = Area Course(Alan Dersi) AE = Area Elective(Alan Seçmeli) UC = University Core (Üniversite Dersi)

C Peer Report for the ASIIN Certificate

1. Formal Information

Criterion 1 Formal Information

Evidence:

- Formal specifications as indicated in the SAR
- Available also on the respective programme websites of EMU:
<https://www.emu.edu.tr/en/programs/electrical-and-electronics-technology-associate-program-turkish/788> (Associate degree programme EET);
<https://www.emu.edu.tr/en/programs/electrical-and-electronics-technology-associate-program-turkish/788> (Higher Diploma programme EET);
<https://www.emu.edu.tr/en/programs/biomedical-equipment-technology-associate-program-turkish/784> (Associate degree programme BET);
<https://www.emu.edu.tr/en/programs/biomedical-equipment-technology-technician-program-turkish/1152> (Higher Diploma programme BET)

Preliminary assessment and analysis of the peers:

The experts state that all relevant formal specifications of the degree programmes under consideration are presented in the SAR and apparently available for all stakeholders on the respective programme websites of the School of Computing and Technology. This information includes the programme names, degrees, modes and duration of study, enrolment schedules and places as well as fees for both the Associate Degree and the Higher Diploma programmes.

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

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

As in their preliminary assessment, the peers confirm that all relevant information, in particular study-related documents like study plans, course descriptions, regulations steering

the student life cycle, have been provided and are transparently accessible to the stakeholders.

The criterion is thus *fully met*.

2. Content, Structure and Implementation

Criterion 2.1 Learning outcomes of the programme / modules

Evidence:

- Respective chapter of the SAR
- Websites of the relevant degree programme: <https://www.emu.edu.tr/en/programs/electrical-and-electronics-technology-associate-program-turkish/788> (Associate degree programme EET); <https://www.emu.edu.tr/en/programs/electrical-and-electronics-technology-associate-program-turkish/788> (Higher Diploma programme EET); <https://www.emu.edu.tr/en/programs/biomedical-equipment-technology-associate-program-turkish/784> (Associate degree programme BET); <https://www.emu.edu.tr/en/programs/biomedical-equipment-technology-technician-program-turkish/1152> (Higher Diploma programme BET)
- Module handbooks, see Appendices C1 of the SAR
- Alumni Survey, Appendix F1 of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

Programme-related learning outcomes covering subject-specific as well as transferable skills and competences have been defined diligently. In the eyes of the peers, these learning outcomes do adequately reflect the theoretical and practical skills, technicians in the respective field of Electrical and Electronics Technology and Biomedical Equipment Technology would be expected to acquire in the programmes. In addition, they plausibly draw the line between a two-year Associate and a three-year Higher Diploma degree programme by attributing to the HD graduates a reasonably broadened reservoir of theoretical and practical field-specific knowledge. At the same time, the intended learning outcomes at programme level are clearly kept apart from the Bachelor level of higher education and, consequently from the experts' perspective are set on the EQF level 5 which they are thought for. For all that, the peers readily accept the formulations, which the programme coordinators have found to describe the intended achievements in core engineering competence

areas. With respect to the latter, the experts stress the knowledge of the disciplinary fundamentals, the ability to apply the field-specific knowledge in an analytically and methodically informed manner, the development of relevant social and communication skills as well as the formation of an adequate professional attitude and even an awareness of fundamental ethical values in the respective profession.

Regarding the ethical dimension of the learning objectives, the peers appreciate it being explicitly reflected in the Biomedical Equipment Technology degree programmes, but at the same time lament, that it is not or at least not explicitly included in the defined learning objectives for the Electrical and Electronics Technology programmes. Astonishingly though, the Alumni Survey indicates that the programme coordinators are principally aware of the importance of this issue. Nevertheless, in the experts' view the ethical issue should be addressed in the respective learning objectives of the mentioned EET programmes as well. In addition, it should be outlined in the module descriptions, which modules are or shall be contributing to the formation of a profession-oriented ethical awareness of students.

Considering the module descriptions, it can be said that the teaching staff editors are obviously intent throughout to transparently concretize the learning outcomes aimed at in the individual modules and thus indicate how the learning objectives on programme level translate into the curriculum. However, the experts also get the impression that the learning objectives projected on the programme and module level respectively either are not always adequately reflected in the module contents or do not reasonably establish their proper achievement. At this point, the explanations of the programme coordinators raise the question of whether the apparent inconsistencies must be traced to incomplete or intransparent programme documentation and module descriptions or are indicative of more serious structural or curricular deficiencies. The experts will discuss the issue at its proper place in the report (see below sec. 2.2 and 2.3).

Criterion 2.2 Contents

Evidence:

- Relevant chapter of the SAR
- Study plans / Curricula, Annex K of the SAR
- Module Handbooks, Annexes C1 and C2 of the SAR
- Sec. 4.3 of Diploma Supplement of each degree programme, Annex E of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

Generally, the experts refer to the concept of the programmes under review as long-standing and well-established courses with a decidedly practice-oriented approach fitting the expectations of the market towards technicians in the field. They acknowledge that the programmes have to be operated under difficult conditions currently. Thus, for instance, an ever-growing Higher Education market bringing up numerous new institutions offering similar programmes at often much lower costs and at the Bachelor level poses a considerable threat to the programmes, which is already visible in declining numbers of applicants and graduates. This apparently led the EMU and the School of Computing and Technology to a heightened awareness of the necessity to respond to the demands of the companies and the labor market (especially of electrical and electronic instructors as well as biomedical technicians) no less than those of the students and would-be technicians. Consequently, the programme coordinators reported about adaptations of the programmes in the course of the prior certification period in order to raise their appeal and attractiveness to applicants as well as other external stakeholders like potential employers. Under these auspices and regarding the fact that the programmes have already undergone a certification five years ago, the experts would have been interested in the programme development since then, but unfortunately could not find more details to this end in the SAR or in the annexes. A brief and comprehensive description of the major curricular and/or organizational changes in the Associate and Higher Diploma degree programmes under review might have been helpful for their appraisal. Yet indications of the programme coordinators and lecturers regarding the enlargement or supplement of certain modules (Mathematics, Properties of Electronic Materials, Physics, Occupational Terminology, etc.) are noted as sufficient evidence and will be dealt with later in this report.

To begin with, it is well understood that the two-year Associate Degree and the three-year Higher Diploma programmes in Electrical and Electronics Technology (EET) and Biomedical Equipment Technology (BET) respectively build upon each other. Graduates might exit after the two-year programmes with an Associate Degree or being directly eligible to continue into the three-year programme completing their studies then with a Higher Diploma. Both degrees certify that their holders possess qualifications matching the professional standard at technician's level. The two-year and three-year courses in the respective disciplines are aligned in that the latter add a couple of courses stretching over one year to the two-year curriculum of the Associate Degree programmes, thereby deepening the fundamental and core subject-specific knowledge and competences achieved in the prior programme. The first study year is to be laying the mathematical and technical foundations of the profession (Electrotechnology, Electronics, Computing in the EET programmes; Electrotechnology,

Anatomy and Physiology, Computing and Properties of Electronic Materials in the BET programmes). The second study year is considered to enlarge and broaden this basis (modules relating to Electrical Installation, Microprocessors and Computer Hardware in the EET programmes; Electronics, Medical Instrumentation, Medical Imaging Systems and Biomedical Signal Processing in the BET programmes), while at the same time integrating a considerable proportion of practical-oriented units into the curricula. The third year is reserved for five more specific modules in both disciplines and another significant practical unit (“Industrial Training” in the HDEET programme and “Medical Training” in the HDBET programme).

While this concept appears plausible to the peers on a first glance, the experts have to assure themselves that the core programme-specific learning objectives would be achieved through the specified curriculum. According to what they saw in the module descriptions, they question is whether “Graduates have up-to date fundamental theoretical and practical knowledge in EET field” and are able to “utilize algorithmic thinking and planning approaches in their applications” or – as stated in the BET qualifications portfolio – whether graduates are able to “use theoretical and practical knowledge and skills to analyse, troubleshoot, and maintain systems and devices used in the biomedical equipment industry”. These are competences, which in the view of the peers adequately fit into the qualification profile of technicians in the field, indeed providing indispensable prerequisites for many courses in the EET and BET programmes. However, the experts to a certain degree miss fundamental mathematical knowledge (such as integral calculus and complex numbers) they consider necessary even on the technicians level in order to fully understand major processes and related applications in the electrical and electronics area. They learnt that the students commence their studies with a comparatively weak knowledge level, in particular in Mathematics, forcing the School to deliver fundamental mathematical knowledge and skills either within the curriculum or extra-curricular and informal. Consequently, programme coordinators and teaching staff pointed out that much of the needed Mathematical knowledge is provided “on demand” in the respective (technical) courses, instead of being taught comprehensively in the Mathematics module.

Another characteristic the experts do not find convincing in the first place is the spread of the electro-technical foundations across the curriculum, which to a certain extent mirrors the situation with regard to the Mathematics education. Relevant parts of Physics for Electro-Technicians relating primarily to Electro-Magnetism, Electro-Statics and Electro-Dynamics seem to be left out or lack the necessary depths for a comprehensive understanding of major parts of electrical phenomena and components like electrical fields, capacitors or p-n-junction. Here again, the programme coordinators and teaching staff jointly stress the skills and competence level of beginners, which have to be dealt with through extracurricular and informal teaching efforts. In addition, the students’ competences in Mathematics

and Physics would be strengthened through an application-oriented approach and an accompanying enlargement of the laboratory capacity in recent years. This is generally welcomed and will be dealt with at later stage (see sec. 5.2).

As it is difficult for the peers to assess whether the curriculum not only adequately corresponds to the intended learning objectives, but also consistently fits its inherent logic, the experts ask the institution to provide a concise overview of the knowledge and skills in Mathematics and Natural Sciences, in particular Physics, delivered extra-curricular and informal during the studies.

Concerning transferable skills also addressed in the intended programme learning outcomes, the peers were told that these would be acquired by students in group projects, internships (“summer practice”, “industrial training”, “medical training”) and graduation works (in the HDEET programme) predominantly. This should be clarified in revised module descriptions accordingly.

Criterion 2.3 Structure

Evidence:

- Relevant chapter of the SAR
- Study plans / Curricula, Annex K of the SAR
- Module Handbooks, Annexes C1 and C2 of the SAR
- Sec. 4.3 of Diploma Supplement of each degree programme, Annex E of the SAR
- Board regulations for Education, Examinations and Success, Appendix D of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

The degree programmes under review consist of modules forming self-contained teaching and learning units, which each of them is attributed a fixed amount of credit points (see sec. 2.4). As mentioned earlier, the structure of the programmes on a first glance appears to be reasonable in terms of the sequence and rationale of the modules. And yet the peers doubt the concrete composition of the modules. They understand the point made by the programme coordinators that due to the unsatisfying level of knowledge of students with regard to Mathematics and Physics particularly, additional teaching to bridge knowledge gaps takes place although being barely documented – and they appreciate the efforts and engagement of the School. To a certain degree this helps to resolve doubts regarding the actual sequence and logical order of modules, for instance concerning the Electro-technology module in the first semester of the EET programmes and the Electric Installation 1

(Electric voltage and current) in the second one. Nevertheless, the spread of fundamentals in Physics across the semesters and the iterative delivering of mathematical knowledge required in core technical modules is not seen as a deliberate strategy to sustainably anchor the learning progress – theoretical knowledge first and applications ensuing – as suggested by the programme coordinators and teaching staff. It is rather received as a stopgap solution having made its way through the curricula. What the experts are missing in this approach is a visible, continuous and sustainable learning progress convincingly reflected in the ordering of the modules or for that matter embedded in the concrete composition of the modules. The peers are of the opinion that a more condensed and concentrated teaching in laying the basics of Mathematics and Physics might pave the way to an overall better and more advanced achievement of the intended learning outcomes. Delivering prerequisite knowledge in respective technical modules/courses as if it were “on demand” could help students to acquire the intended learning outcomes, but would barely do that in an effective manner if this sort of integrated teaching at the same time were meant to catch up with apparent deficits in the students’ skills portfolio from prior learning. In that sense, the experts maintain that irrespective of prior informal and/or extra-curricular delivery of knowledge and skills in Mathematics and Physics, the logic behind ordering the modules needs to plausibly reflect the students’ continuous development of subject-related knowledge and skills.

The peers explicitly appreciate the strong emphasis laid on the practical, directly profession-oriented part of the curriculum. This is amply confirmed not only through laboratory units regularly accompanying the introduction of the discipline-related theoretical units, but also through extensive internships (“Summer Practice”, “Industrial Training”, “Medical Training”) co-supervised, as peers were told, by teaching staff from EMU as well as appointed industry supervisors. However, since internships/trainings were and are not possible onsite during the COVID-19 pandemic, long-term projects for the students, which could be done online, have been substituting them, and the peers agree to the notion that such projects provide a suitable alternative.

It is further acknowledged that the University principally vouches for the overall quality assurance of the internships (cf. [Board] Regulations for Education, Examinations and Success, No 24 “Training and Apprenticeship”). Otherwise, the respective provision only states that students have to pass all trainings (apprenticeship) as required through the respective department and to prepare related reports to be evaluated through specifically elected committees of that department. Content and intended learning outcomes, conduct and supervision of daily work in those trainings – which are considered crucial for this class of graduates – are barely visible and not effectively regulated as far as could be seen from the

available information. There appear to be indications of a department “manual” or “provision” governing the internships, but the experts were unable to get certainty on the issue. Consequently, they asked the responsible department to make such manual or regulation available, if it is already in place. At least with respect to the “Medical training” in the Biomedical Equipment Technology Higher Diploma programme, the programme coordinators frankly admit that they were considering a more structured approach to the training and its supervision at clinics and comparable institutions, where this obviously has not been possible so far.

Moreover, it seems reasonable that such a practical training is integrated in the curriculum of the Associate as well as the Higher Diploma programmes of each discipline (“Summer Practice” and “Industrial Training” respectively “Summer Practice” and “Medical Training”) differentiated only through the length of duration and allotted credit numbers each. Before this background however, the rationale behind the additional “Medical Applications” course in the Biomedical Equipment Technology Higher Diploma programme, which is also an entirely external practice- and profession-oriented module essentially serving much the same purposes as the internships do, is not at all self-evident. As this module is awarded 20 ECTS credit points and thus more than half of a semesters’ workload, the question of what actually differentiates it from the other internships (if its objectives are not significantly more detailed and specified to certain medical applications or apparatuses, for instance), is all the more pressing. Since the audit discussions have not shed more light on this, the programme coordinators are requested to briefly comment on the issue too in its statement to this report.

The curricula of the EET programmes do consist some elective courses giving students an opportunity for further profiling their respective study plan and qualifications. In the BET programmes however, the number of electives is extremely limited (in fact to just one elective in the Higher Diploma programme only). This is comprehensible from the experts’ point of view, since the programme requires the programme designers to integrate an already interdisciplinary bunch of subjects, particularly in the Associate Degree programme. Otherwise, it puts even more weight on a convincing explanation for the iteration of voluminous internships especially in the BET programmes (“Summer practice”, “Medical Applications” and “Medical Training”).

Finally, it is understood that the programmes are not in the first place aiming at an international or even European qualification profile of graduates nor at the European labour market, but at the much-contested regional labour market in the respective fields of competence. By contrast, students and industry representatives jointly stated the benefits of an education, which is internationally comparable in scope, quality and language. In this latter regard, the peers appreciate that the curriculum already comprises two Basic English

modules in order to enlarge the students' foreign knowledge competences. On the level of education sought for in these programmes, this effort might not generally be found anywhere in Europe. But since the EMU explicitly chooses to have its programmes undergo an international certification, which is by definition always directed towards international or for that matter European quality standards, the expert team sees room for improvement of the English proficiency of both the students and the teaching staff. The panel therefore decides to address a respective recommendation to the EMU in order to not only widen the students' employment perspectives, but also to encourage their mobility during their study period.

Criterion 2.4 Workload

Evidence:

- Relevant chapter of the SAR
- Study plans / Curricula, Annex K of the SAR
- Module Handbooks, Annexes C1 and C2 of the SAR
- Sec. 4.3 of Diploma Supplement of each degree programme, Annex E of the SAR
- Board regulations for Education, Examinations and Success, Appendix D of the SAR
- Sample of Instructor Evaluations Survey, Appendix L of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

The expert panel takes note that EMU is using a credit hour system primarily referring to the amount of courses taken in one semester. Thus, each weekly lecture hour is counted one credit hour. Student workload is obviously not taken into account, when counting credit hours according to the EMU credit system, which consequently needs to be converted into the ECTS in order to enable the peers to assess whether the student workload per module, per semester and per study programme are comparable internationally, realistic and bearable for the students. In this respect, the expert team notes that despite the EMU credit system's negligence of the student workload there is already an awareness of the necessity to observe it as an important aspect of a student-centered teaching and learning process. The instructor evaluations done by the students do contain a question regarding the actual workload they spent each week to study the course. According to the reporting of programme coordinators, there have been adaptations of courses and attached credit hours in the previous certification period. The related conversion of EMU credit hours into ECTS credit points also seems to resonate with the students' calculation of their

weekly workload, thus rendering the ECTS distribution generally plausible, realistic and bearable for the students.

Still, apart from the above-mentioned sample of the instructor evaluation, the EMU has presented no further evidence of a structured and systematic monitoring and analysis of the workload of students. The students, in turn, apparently do have little knowledge of the ECTS and its underlying principles. As this obviously poses no direct concern for the quality of the programmes and has not been principally left out in the School's quality assurance policy, the expert panel considers a recommendation sufficient concerning the monitoring and follow-up processes of the student workload as well as the information policy about the principles and practical use of the ECTS.

Criterion 2.5 Admission requirements

Evidence:

- Relevant chapter of the SAR
- Admission Criteria available on the internet: <https://www.emu.edu.tr/en/prospective-students/undergraduate/undergraduate-admission/1292> (Download: 18.12.2020)
- Regulation for Entrance Exams and Student Admission, available on the internet: http://mevzuat.emu.edu.tr/5-1-1-Rules-Entrance_exam.htm (Download: 18.12.2020)
- Audit discussions

Preliminary assessment and analysis of the peers:

The expert team learns that (local, Turkish Republic and international) applicants for admission to the two-year Associate and three-year Higher Diploma programmes must pass the EMU entrance examination. In order to get pre-registered, the applicants have to provide evidence of a minimum of five GCE (General Certificate of Education) 0 level exams in relevant subjects or any other equivalent exams according to the English educational system. The peers are also told that within the set quota also Northern Cyprus vocational high school graduates can be pre-registered in the two-year Associate Degree programmes. Admission rules to the three-years vocational education programmes are the same and, additionally, graduates of the respective Associate Degree programmes can be admitted and have their credits transferred with departmental approval. Due to mostly different vocational education systems and Turkish as teaching language of the programmes under review, there are almost exclusively local and Turkish students enrolled in the programmes. And according to the programme coordinators mainly because of a spread of private owned

Higher Education Institutions (HEI) in Northern Cyprus in recent years, the number of applicants, students and graduates is steadily shrinking, making it extremely difficult to admit and enroll students fitting the requirements of the technical degree programmes. Due to the generally debilitated standing in the competition for the best applicants, the overall situation leads – according to the programme coordinators – to the admittance of students lacking elementary prerequisites especially in Mathematics and the Natural Sciences. As a result, the peers understand that under the given circumstances the admission criteria do little to contribute to the overall study success of the degree programmes, which they normally are supposed to do.

Although the situation may hardly be changeable in the short run, it nevertheless seems inappropriate to the peers that deficits in the students' educational backgrounds are to be entirely remedied within the curriculum of the Associate and Higher Diploma Degree programmes under review. If most of the students are not yet fit for the programmes in Mathematics and Physics respectively, it is worth every effort to help them catch up with these shortcomings. The peers explicitly appreciate this attitude. What they doubt is whether reiteration and knowledge enhancement should be incorporated in the modules, letting the lamentable situation encroach on the mode of delivery of the teaching and ultimately on the structure of the programmes (see above sec. 2.2 and 2.3). They suggest considering whether learning or repetition of prerequisite knowledge as far as this is prompted by deficits on the learner's side would not be more effectively taught prior to commencing the studies in preparatory or bridging courses similar to the English Preparatory Programme at EMU. From the perspective of the peers, this might contribute to a more coherent and conclusive implementation of the curricula of the degree programmes as outlined in sections 2.2 and 2.3 of this report.

Criterion 2.6 Prospects of the labour market and practical orientation

Evidence:

- Alumni and Employer surveys, Appendix F1 and F3 of the SAR
- Statistics on graduates employment in terms of numbers and market sector
- Overview of companies for practical training
- Discussions with students/alumni

Preliminary assessment and analysis of the peers:

The peers learnt from the audit discussions with both programme coordinators and representatives from industry that the graduates of the programmes under review are highly demanded in a (restricted) local labor market for technicians in the respective field. Em-

employers of the graduates oftentimes are alumni of the same programmes knowing and estimating their competence profile. In addition, the School and the department responsible for the programmes keep close contacts with the local “Cyprus Turkish Electrical Contractors’ Association” and the “Cyprus Turkish Engineers and Architects Chambers’ Union”. Feedback from the alumni as well as from the “Contractors’ Association” according to the programme coordinators feeds into the further development of the programmes maintaining them up-to-date with the demands of the labor market and of new technological developments at once. The peers welcome the somewhat informal inclusion of external stakeholders in the quality development of the programmes.

Moreover, the panel notes that Alumni and Employer Surveys are put in place in order to initiate a more reliable and continuous feedback of important stakeholders of the programmes. Yet they also saw that the attached samples of survey questionnaires and results are of low significance due to an overall low or not even mentioned response rate and the fact that they are undated. Adding to that is the missing information about the time interval, in which these surveys are conducted. From the presented data, reliable inferences could hardly be made and nothing like that could be found in the SAR. The experts therefore strongly recommend using and documenting the surveys in such manner that they reasonably and traceably support their assigned quality assurance purpose.

Apart from that, the audit discussion with industry representatives reveals that they would like to see a broadened scope and mobility of the graduates on the European or International level. In that respect, the enlargement of their foreign (particularly English) language proficiency – even if they are likely to be employed nationally or locally – would be welcomed from their side as well (see above sec. 2.2).

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

The peers appreciate the detailed commentary and clarifications of the School of Computing and Technology (hereinafter: SCT). In many instances, the comments and additional documentation provided help to better understand the learning objectives and teaching results of the degree programmes under review. The expert panel judges the material according to the related issues raised in the above preliminary assessment:

Learning outcomes (ASIIN 2.1)

The peers are highly satisfied with the steps already taken by the programme coordinators of the EET programmes to include the ethics issue into the curriculum of the programmes. Not only did they manage to discern professional and scientific ethical matters. They also have taken the opportunity to adapt the programme-specific learning objectives accordingly and to clearly identify the related issues in specified modules/module descriptions.

Matters of scientific ethics will thus be discussed in the course of report writing for internships and graduation projects, while matters of work ethics of electrical technicians are to be tackled in the Vocational Orientation course and in the training and thesis modules as well). Additionally, the panel positively noticed that the programme coordinators have contacted the Northern Cyprus Chamber of Electrical and Electronics Engineers in order to introduce students from the very start of their studies in the Chamber's Code of Ethics, which it currently works on. If students are given the chance to attend seminars on the matter held by members of the Chamber – as the SCT indicates in its comments – that would certainly be an invaluable and highly appreciated step forward. As regards the issue of ethics, anyway, the panel has no doubt that students of the programmes under review, and in particular of the EET programmes, will be facing sufficient opportunities to build an appreciation of the issue. Furthermore, the panel is convinced that the topic is adequately addressed now, in the programmes' objectives as well as in the module descriptions. Consequently, the peers waive their preliminary reservations in this respect. The panel takes note that the respective adaptation of the learning objectives in the EET programmes still needs the approval of the governing bodies of the University, but considers this an essentially formal regulatory point not requiring any further proof of evidence.

Curriculum / Contents (ASIIN 2.2)

The programme coordinators have provided valuable information about the didactical strategy of delivering knowledge and skills in Mathematics and the Natural Sciences, in particular Physics, integrated in the regular course of the respective degree programme. They again pointed out and clarified to some extent the educational background of the students coming for the most part from vocational and technical schools. Due to the focus of these schools on practical skills and competencies especially in the last part of their studies, the students – according to the SCT – lack mathematical and theoretical foundations and need to be upskilled extracurricular and/or, more often, within the regular curriculum. This strategy worked out more or less in the past. At the same time, the situation has been considered problematic for quite some time, and a process of restructuring of the vocational schools in that respect driven by the Ministry of Education seems underway. The panel regards the reshaping and adjustment of the modules, which provide the knowledge basis in Mathematics and Physics, as a fundamental step to set aside the necessity to deliver those competencies “on demand” and repeatedly in all stages of the curriculum. They furthermore agree with the expectation of the programme coordinators that until the already mentioned reform of the vocational school curricula takes hold, the students of the programmes will need support in order to successfully master the updated Mathematics and Physics courses.

Concerning the latter, it is all the more laudable that the SCT is willing to organize non-credit “extracurricular tutorial sessions” for the students to support their study progress in these subjects. Despite the announcement of this measure by the SCT, the peers see value in supporting the initiative through a respective recommendation (see below, sec. F, E 3.).

Notwithstanding, in their opinion the logical structure and consistency of the curricula as well as the sequencing of the courses/modules will be benefitting from this adjustment and support. As an overall result, it will thus principally contribute to the achievement of the neatly defined learning outcomes of the programmes. Concerning that, the objective matrices, the SCT procured based on the updated contents and intended learning outcomes of the above-mentioned modules (and some others) have proven meaningful in demonstrating the contribution of the individual courses to the programme learning objectives. Critical remarks of the peers in their preliminary assessment have been alleviated significantly through this modification. Therefore, the peers’ reservations concerning the correspondence between the declared programme learning objectives and the curricular contents on the one hand and the logic and consistency of the curricula, specifically with respect to the provision of basic knowledge parallel to the regular curriculum, on the other have been removed. Consequently, they propose to waive requirements originally foreseen to address those issues. Moreover, as the SCT apparently has put into practice the announced curricular changes (starting the revised fundamental courses in the spring semester 2020/21), the peers assume the adaption to be valid already. Still, the peers caution that the impact of the changed courses and didactical structure on the study progression of students should be closely monitored in order to ensure their appropriateness in supporting the achievement of the learning objectives. They propose adding a new recommendation to this end (see below, sec. F, E 1).

This conclusion takes also note of the considerable efforts of the SCT and the programme coordinators to accommodate the recommendations of the peers of the preceding certification procedure. According to the reporting of the SCT, the results of this external QA review have been materialized in improving subject-specific competencies of the students (for instance in the fields of semiconductor physics) as well as in supportive quality assurance measures (like implementing a regular monitoring of the student workload). The monitoring of the students’ workload and other QA aspects of the degree programmes will be addressed in the following paragraphs and section 6 respectively.

The peers appreciate that the SCT provided updated module descriptions along with the implementation of modifications of the foundational courses in Mathematics and Physics. Likewise, the panel notes that especially the summer trainings and internships were expected to contribute to the development of the students’ social and communication skills. This has been demonstrated convincingly through the objective-matrices provided and

clearly indicated in revised module descriptions. Overall, the panel deems this satisfactorily fulfilling the transparency requirements, while assuming that the updated module descriptions will be made publicly available on the website as indicated in the SAR.

Internships / Working practices (ASIIN 2.3)

The peer panel notes that there is (and has been) much more information about the internships available than could be inferred from the SAR and the audit discussions. Guidelines and rules for the application process as well as information about the report format, presentation techniques, internship evaluation criteria, and announcements about deadlines for report submissions and dates of presentations are obviously available on the websites. Although in Turkish language only (at present), the peers have no doubt that this information in combination with a respective regulatory framework ensures the proper design, integration and conduct of practical trainings within the scope of the degree programmes under review.

The panel is also thankful for the comments regarding the differentiation of the two internship modules (Summer Training in the ABET programme and Medical Training in the HBET programme respectively) on the one side and the Medical Applications course on the other. It is understood that the internship modules as well as the Medical Applications course are both aimed at enlarging the practical skill set of students. Yet the Medical Applications module has to be conducted at a hospital requesting students to observe the installation and operation of more advanced medical devices such as MR, CT, ultrasound, etc., and, in addition, learn more about the general organization of the hospital, its departments, and/or the equipment found in each department. By contrast, the Summer and Medical Training courses have to be passed in companies specialised in the technical service or production of medical devices. The programme coordinators convincingly showed that the distribution of these practical and application-oriented components across the curricula of the Associate and Higher Diploma BET programmes are reasonably supporting the full achievement of the intended learning outcomes. The panel sees its request for clarification to this regard answered sufficiently.

English proficiency (ASIIN 2.3)

The peers welcome the efforts of the SCT to strengthen the students' English language skills either within the curricula of the degree programmes or through voluntary extra-curricular course offerings. The announcement of the programme managers to intensify the encouragement of students in making use of these offerings is also appreciated, since language competences will broaden the job perspectives of the graduates even at an international

level. In order to support the SCT initiative, the peer panel proposes a respective recommendation to promote the English language skills of both the students and the lecturers (see below, sec. F, E 2.).

Workload (ASIIN 2.4)

As the comments of the programme coordinators suggest, the mechanism in place for monitoring the workload of students and the related ECTS distribution per module and semester, worked out well so far. Combining this with the reported cases of re-adjustments of ECTS values, the peers consider a recommendation in this direction – as foreseen in their preliminary assessment – dispensable. Nevertheless, the peers strongly support the idea of the programme coordinators to strengthen the students' awareness and knowledge about the ECTS and thus promote the significance of the monitoring instrument.

Employer surveys (ASIIN 2.6)

The peer panel appreciates the announcement of the SCT to take additional measures to increase the response rate to its employer surveys and to more meaningful and transparently document their quality assurance impact on the programmes. The panel confirms a recommendation to this end (see below, sec. F, E 4.).

Because of the some above-mentioned reservations, the panel deems *not all requirements of the criterion 2 fulfilled completely yet*.

3. Examinations: System, Policy and Forms

Criterion 3 Exams: System, policy and forms
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Evidence:

- [Board] Regulations for Education, Examinations and Success, Appendix D of the SAR
- Regulation for Examinations and Evaluation, available on the internet: [http://mev-zuat.emu.edu.tr/5-1-4-Rules-examinations and evaluations.htm](http://mev-zuat.emu.edu.tr/5-1-4-Rules-examinations-and-evaluations.htm) (Download: 18.12.2020)
- Audit discussions

Preliminary assessment and analysis of the peers:

From the documents presented as well as the discussions with teaching staff and students the peers infer that examination rules and regulations for the programmes are in place and communicated transparently.

Each course includes at least one midterm and one final examination, for which examination weeks are pre-determined by the University and communicated in advance to the students. For each examination period two weeks are allocated. In addition, the teaching staff may include minor assessments such as quizzes, project works, and presentations; these are normally supplemented through lab assignments in technical modules. Exams are described in the module descriptions and the students are told to receive detailed information at the beginning of each semester. The final examination contributes a maximum of 50% to the final grade while the successful completion of the midterm exam is not considered to be a prerequisite for participation in the course's final examination.

The peers consider the rules for make-up exams and re-sits adequate and understand that these are in place and understood by the students. Missed exams can be repeated within the same examination period ("make-up exam"); if students fail a course completely, it needs to be repeated in the following semester ("re-sit").

The students demonstrated their content with the examination structure and organization in general; only during the early stages of the pandemic online assessment proved to be difficult for various technical reasons. Meanwhile, the peers were impressed by the flexibility with which the teaching staff as well as the students have adapted to the circumstances of assessment during the pandemic.

In general, the peers were convinced that the examination organization and the forms of exams are adequately supporting the achievement of the modules' learning outcomes and contributing to an efficient study progress of the students.

During the remote audit, the experts had the opportunity to look into a sample of examinations. In order to get a more reliable picture of the degree, to which the module objectives are actually being achieved, the peers would like to see an additional sample of exams of the modules with codes EET 132, 231, 232, MATE 117, and BMET 262. The programme coordinators or teaching staff is requested to provide this sample before their final assessment on the issue.

For the same reason, it might be insightful for the peers to have a look at a few Graduation Projects or training reports in the case of the Biomedical Equipment Higher Diploma programme (which does not contain a Graduation Project as mandatory part of the curriculum). Concerning the Graduation Project in the EET Higher Diploma programme, the experts learnt that the projects are usually designed and conducted as group works, wherein individual contributions of the group members are graded individually. They are also told that graduation projects so far have not been included in the BET Higher Diploma curriculum because of the normally highly expensive medical equipment, which in some cases is even not available at EMU. The cost argument does not sound fully convincing to the peers.

Still, they acknowledge that the programme designers tried to compensate for this through an (additional) intensive internship at clinics or respective medical institution (20 ECTS). Yet, not least with a view to the mandatory internships and practice-oriented modules in the second year (see above sec. 2.3) of the BET programmes, the integration of a Graduation project in the BET Higher Diploma programme should be considered seriously.

However, the panel's final assessment of the issue is dependent on the general quality level of the reports to be prepared in the Medical Training module of the third year, a sample of which they would be grateful to see in the further procedure (see previous paragraph).

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

The peers are thankful for the opportunity to have a closer look at a sample of additional examinations, Graduation Projects and Training Reports in order to get an impression of the level of the qualification gained. Overall, they are of the opinion that the results confirm the achievement of the intended learning outcomes and reflect the level of qualification in the respective field (Level 5 of the EQF).

The criterion 3 is considered *fulfilled* by the peer panel.

4. Supporting Processes I: Teaching, Methodology and Support

Criterion 4.1 Teaching methodology

Evidence:

- Relevant chapter of the SAR
- Module Handbook, Appendix C of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

Details of the teaching methodology of each course are described in the module descriptions compiled in the module handbook. The latter are apparently not yet available online and thus should be made accessible to the stakeholders. The peers confirm that the methodological approaches are diverse and related to the individual subject and learning outcomes of the courses, in general offering a combination of theoretical as well as practical elements. It seems reasonable to the peers that through laboratory units, project works and the included internships the students are animated to apply their acquired skills by

themselves at the earliest possible stage. Consequently, the peers were convinced that a good preparation for the work life is achieved.

In times of a pandemic, the review specifically focuses on how the teaching and learning process deals with the extra-ordinary circumstances. Like many others, the University changed to online teaching formats in late March 2020 and since then is offering a growing variety of support measures to their students, many of whom are living in Turkey and cannot even enter the island. For the Cypriot students, the teaching staff remains available, since all distance teaching is being performed from the offices at EMU and office and contact hours are taken seriously. Classes are offered online via Microsoft Teams or in the form of individual or group works through Moodle and similar platforms. The students were very happy with the way distance learning is performed in the programmes.

Criterion 4.2 Support and assistance

Evidence:

- Relevant chapter of the SAR
- Comprehensive information about supportive student services on the websites of EMU, see: <https://www.emu.edu.tr/campus-life> (Download: 18.12.2020)
- Audit discussions

Preliminary assessment and analysis of the peers:

In general, the peers perceived that students in the programmes under review felt very well taken care of. Thus, each student is assigned an academic supervisor in the department, who supports him/her throughout the study process in all matters of the academic life. Furthermore, there is a broad variety of clubs and other student activities. Also, the role of the students' union has been constantly developed during recent years. By now, student representatives are included in all relevant University committees and take part in important study-related decisions.

The students apparently appreciate the support they receive from the teaching staff at any time, the more so since most lecturers are not only available during office hours but also on their mobile phones. This close connection becomes especially apparent in the context of the internships. With the ET and IT sectors in North Cyprus being of limited size only it is difficult to ensure that all students find adequate placements in the country. Nevertheless, company representatives and teaching staff explained that they work closely together in order to provide a placement for all students having difficulties in finding a placement on

their own. Significant and supportive in this regard is also the close ties to the Constructors' Association and the "Cyprus Turkish Engineers and Architects Chambers Union".

In conclusion, the peers were convinced that the support services in place are successfully contributing to the students' study progress.

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

As already indicated in its preliminary assessment, the panel considers the supporting services for the degree programmes under review conducive with regard to the achievement of the intended learning outcomes. They are fit for their purpose and *fulfil the demands* of the criterion 3.

5. Supporting Processes II: Resources

Criterion 5.1 Staff

Evidence:

- Relevant chapter of the SAR
- List of available Teaching Staff, Appendix A of the SAR
- Staff handbook, Appendix B of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

The SAR lists two Assistant Professors and four Full-Time Instructors as relevant teaching staff available for the programmes under review. Reportedly, the minimum weekly load of all academic staff is determined by the rector's office according to a collective labour agreement and is 12 EMU workload hours per week at the time of the audit. According to indications of the programme coordinators, a full-time system administrator ensuring an efficient computer lab environment for students and a full-time technician for the electrical and electronics laboratories are supporting the teaching staff. In addition, research assistants are said to be available to help students during lab and tutorial hours.

Generally, the expert team considers the qualification of the staff fitting the purpose; also the number of teaching staff members and supporting staff appears to be sufficient to ensure that the programmes could be operated without bottlenecks. Despite this general impression, the experts did not see any reliable data about the actual teaching load of the lecturers. In particular, there is no evidence of whether teaching obligations of the relevant

staff are limited to their engagement in the programmes under review or whether they do have additional teaching obligations in other programmes. However, in the audit talks with programme coordinators and teaching staff, the panel got the impression that staff members are not overburdened and do have enough time to even engage in some research work in case they wish to do so. Since there are no indications of insufficient teaching capacity such as critical student evaluations with regard to the availability of the teaching staff or cancelled classes, the peers assume that the teaching capacity available for the programmes considered here fits the demand.

With regard to the strong application-orientation of the programmes and the demand for ready-to-enter-employment graduates, the peers' suggestion to recruit at least some qualified staff from the industry for the teaching in specified subjects found general support from the programme coordinators and other EMU staff.

As to the further development of pedagogical and research capabilities of the teaching staff, the expert panel finds that there are offerings in place for the staff to improve on its pedagogical as well as disciplinary skills (for instance through CPD courses of the "Chambers' Union"). This is generally welcomed as is the apparent approval of the opportunities and participation through staff members – as time and schedule allow.

Criterion 5.2 Institutional setting, funding and equipment

Evidence:

- Relevant chapter of the SAR
- List of Cooperation Agreements of EMU, Appendix H2 of the SAR
- Tuition fees (sample), Appendix I of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

The peers note that mainly tuition fees provide the financial basis for the programmes. Consequently, the already mentioned decrease of the overall numbers of applicants and students directly affects the prospects of the programmes. Reduction of formerly considerable state funding of the programmes (Northern Cyprus and Turkish Republic) makes the situation even worse. Increased efforts of the HEI management and programme coordinators to attract new students for the degree programmes, in particular through scholarships and intensified strategic advertising at vocational and other high schools, are considered reasonable counter-measures, which may prove ultimately successful.

Regarding the infrastructure and laboratory, the peers take note especially of the Electronics Laboratory, the Electrical Installation and Machines Lab, the Microprocessor and PLC Lab with respect to the EET programmes and the Biomedical Instrumentation Lab concerning the BET programmes. They were told that students of the Biomedical Equipment programmes do have access to Magnetic Resonance Scanners in clinical institutions only and that direct experience with the MRS, ultrasound scanners or other highly expensive medical instruments not available at EMU is closely limited to very simple applications or just the observation of their functional principles. While coordinators insist that the BET programmes are supposed to equip students with the fundamental knowledge and competencies of biomedical equipment, they at the same time are convinced that any special training would and could be done in clinics and related medical institutions after the students graduation. Since the audit was conducted remotely (due to the Corona pandemic) and the experts deem the information about the lab infrastructure insufficient so far, they recommend postponing their final assessment on this matter. This shall be reserved to a site visit of one peer of the team and the project manager in 2021. The Certification Commission is recommended to certify the programmes with the reservation of the peers' final assessment of the lab facilities.

The peer panel takes note of the list of partner universities of the EMU all over the world. Apparently, only a share of them is of significance for the programmes under review. Nevertheless, even a few partner universities providing possibilities for a student exchange or the opportunity for the teaching staff to actively engage in joint research projects are potentially benefitting the quality of the programmes and the achievement of the learning objectives.

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

Overall – as already outlined in its preliminary assessment – the peer panel considers the personal and financial resources of the programmes *sufficient and thus meeting the requirements* of criterion 5.

Due to the limitations of providing evidence about the physical basis of the programmes, which is of major importance in technical disciplines, in a mere remote audit, the panel suggests to reserve the final assessment on this issue to a site inspection in a later stage of the procedure.

6. Quality Management: Monitoring and Continuous Improvement

Criterion 6.1 Quality assurance & enhancement

Evidence:

- Relevant chapter of the SAR
- Sample of Course Assessment Survey, Appendix C2 of the SAR
- Samples of Alumni and Employer Surveys, Appendices F1, F3 of the SAR
- Sample of Instructor Evaluation Survey, Appendix L of the SAR
- Audit discussions

Preliminary assessment and analysis of the peers:

The expert panel acknowledges that the School of Computing and Technology is dealing with the quality assurance issue institutionally and procedurally. A Quality Assurance Committee has been established mainly responsible for the collection, analysis, and coordination of data, which are gathered primarily through a set of surveys (Course assessment, Instructor evaluation, Alumni and Employer surveys etc.). According to the SAR, most importance is given to the students' and instructors' evaluations used as core feedback of students to the design, composition, content, delivery and quality of teaching. The Training/Internship survey ("Logbook") is additionally used as feedback source regarding the professional adequacy of the programmes. Surveys and initiated meetings with students on a regular basis show the University's attempt to include the major stakeholders of the degree programmes in the establishment of a quality culture. The expert team appreciates this and considers the framework supportive with respect to the continuous quality development of the degree programmes. On this occasion, examples of feedback leading to curricular or administrative changes have been presented in the audit. To some extent at least, they provided evidence that the QA measures and instruments are fit for their purpose. Otherwise, the School did not deliver a systematic reporting about the development of the programmes in the previous certification period, which might contributed to a more comprehensive picture of the programmes as well as of the impact of the quality assurance framework. In this respect however, the peers decided to view the mentioned exemplary changes as *pars pro toto* of a generally responsive QA mechanism.

Speaking with the students about the quality assurance management of the School revealed that a structured feedback to them on how their evaluations have been proceeded

in order to improve the programmes is almost missing. Essentially admitting this, the programme coordinators indicated that the School is working on closing feedback cycles, in particular with regard to the full and continuous inclusion of the students. The panel considers it indispensable that feedback loops in the quality assurance of the programmes, especially with regard to student evaluations, are closed effectively and in an appropriate manner.

Another issue with a view to quality assurance are the recommendations formulated by the peers and the Certification Committee in the preceding certification decision. These recommendations are explicitly meant to be treated by EMU in a direction it deems favorable. Instead, EMU has not procured a systematic account of how it has responded to the recommendations, neither in the SAR nor in the audit discussions. In order to get more information about the handling of this result of an (external) quality assurance procedure, the expert panel asks the programme coordinators to briefly summarize the University's response to the recommendations of the previous certification.

Criterion 6.2 Instruments, data and methods

Evidence:

- Alumni Survey Results, Appendix F1 of the SAR
- Employer Survey Results, Appendix F3 of the SAR
- Exit Survey Results, Appendix F2 of the SAR
- Number of Students, Graduates, Dropouts, Appendix G of the SAR

Preliminary assessment and analysis of the peers:

From the samples of surveys provided by the School of Computing and Technology, the expert panel infers that in principle significant information and data is collected and subject to analysis and further utilization for targeted improvement methods. The data and results submitted along with the report however simply do not evidence the functioning of the envisaged data collection, analysis, evaluation and follow up, as they are mostly not significant in response rate, undated and, most important, not accompanied with an assessment and/or a follow-up process. The experts are convinced that the programme coordinators and other responsible bodies do undertake such analysis of the available data and, wherever possible, decide on follow-up measures. Yet in the end, this has to be documented and evidenced. The panel therefore strongly advises the programme coordinators to not just present the collected data and figures to reviewers of an external quality assurance procedure in future, but rather to contextualize the statistics and thereby make it comprehensible in the respective quality assurance framework.

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

The peer panel acknowledges the efforts undertaken so far to establish and implement a functional quality management of the degree programmes. They positively note that further improvements in this regard have been made since the preceding certification procedure. This becomes particularly apparent when looking at the summary of measures taken after and in response to the foregoing certification decision. In addition, the multitude of (often only) recently employed instruments to get the students' feedback on the programmes could be seen as evidence of appropriate efforts in this direction. Nevertheless, the peers lay stress on their preliminary criticism that the feedback cycles particularly with regard to the involvement of the students need to be closed effectively and sustainably. While acknowledging the progress in the quality management of the programmes, the panel therefore still sees the necessity to implement sustainable feedback cycles. They adjust the requirement originally formulated in this respect under the impression of the updated information about actual developments in the quality management of programmes (see below, sec. F, A 2.).

Due to the latter reservation, the peers consider the quality management of the programmes *not yet fully in accordance with the respective criterion*.

7. Documentation & Transparency

Criterion 7.1 Relevant documents

Evidence:

- [Board] Regulations for Education, Examinations and Success, Appendix D of the SAR(
- Regulation for Examinations and Evaluation, available on the internet: http://mevzuat.emu.edu.tr/5-1-4-Rules-examinations_and_evaluations.htm (Download: 18.12.2020)
- Regulation for Entrance Exams and Student Admission, available on the internet: http://mevzuat.emu.edu.tr/5-1-1-Rules-Entrance_exam.htm (Download: 18.12.2020)
- Rules for Admission to the Undergraduate Programmes, available on the internet: <https://www.emu.edu.tr/en/prospective-students/undergraduate/undergraduate-admission/1292> (Download: 18.12.2020)

Preliminary assessment and analysis of the peers:

The peers state that the relevant study- and exam-related regulations, provisions and by-laws are legally binding, published and for all stakeholders available on the internet. A department “manual” or “guidelines” relating to the internships should be provided, if applicable (see above sec. 2.3).

Details of the module descriptions must be updated as specified earlier in this report (see sec. 2.1 and 2.3). The peers also have the impression that the module descriptions collected in the module handbooks are not accessible to all stakeholders, in particular the students, at present. In that case, the panel requires that the module handbooks as a primary source of information about the modules and programmes must be made available for all stakeholders, best by uploading them to the EMU websites.

Criterion 7.2 Certificate upon conclusion
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Evidence:

- Programme-specific Diploma (Certificate), Appendix E of the SAR
- Programme-specific Student Transcripts (ToR), Appendix E of the SAR
- Programme-specific Diploma Supplement, Appendix E of the SAR

Preliminary assessment and analysis of the peers:

The peers take note of the final documents presented through programme-specific samples in the annexes of the SAR. Concerning the Diploma Supplement, they assert that these documents contain identical generic learning objectives for both programmes of each discipline (EET and BET respectively). They stressed that the intended learning outcomes need to be programme-specific and consistent with those presented in the SAR and on the website of the respective programme.

In addition, it is suggested to include meaningful statistical data with regard to the comparability of the individual study performance of graduates in accordance with the ECTS Users’ Guide¹.

¹ See ECTS Users’ Guide, sec. 4.3; https://ec.europa.eu/education/sites/default/files/document-library-docs/ects-users-guide_en.pdf (Download: 18.12.2020).

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

The peer panel positively notes the University's apparent willingness to include also statistical data according to the ECTS User's Guide into the diploma supplement in order to provide external stakeholders with meaningful information regarding the assessment of the overall individual performance of graduates.

However, the panel still sees the necessity to inform about the partly updated programme learning objectives in the Diploma supplement as already envisaged by the University (see below, chapter F, A 3.).

As already stated in previous sections of this report, it is assumed that the adapted learning outcomes of the EET programmes (professional ethics) as well as the revised and adjusted module descriptions (fundamental courses in Mathematics and Physics in particular) have already been or will be communicated transparently to the relevant stakeholders.

D Additional Documents

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

- D 1. Programme-specific and comprehensive information about knowledge and skills in Mathematics and Natural Sciences, in particular Physics, delivered extra-curricular and informal during the studies (ASIIN 2.2)
- D 2. If available, guidelines for Working practice/internship (ASIIN 2.3)
- D 3. Provide explanation about the difference between the modules “Medical Applications” and “Summer Training” in the second as well as the “Medical Training” in the third study year of the Biomedical Equipment degree programmes (ASIIN 2.3)
- D 4. Samples of further exams in core fundamental subjects and of Graduation Projects respectively training report (for Biomedical Equipment HD programme) (ASIIN 3)
- D 5. Comment on how the university has reacted to the recommendations of the previous certification (ASIIN 6.1)

E Comment of the School of Computing and Technology of the Eastern Mediterranean University (15.02.2021)

The institution provided a detailed statement as well as additional documents on the following issues:

- Updated learning outcomes for the EET degree programmes (integration of scientific and professional ethics issue) (ASIIN 2.1)
- Knowledge and skills in Mathematics and Natural Sciences, in particular Physics, delivered extra-curricular and informal during the studies (ASIIN 2.2)
- Guidelines for Working practice/internship (ASIIN 2.3)
- Explanation of divergence between the modules “Medical Applications” and “Summer Training” in the second as well as the “Medical Training” in the third study year of the Biomedical Equipment degree programmes (ASIIN 2.3)
- Samples of further exams in core fundamental subjects and of Graduation Projects respectively training report (for Biomedical Equipment HD programme) (ASIIN 3)
- Response of the University to the recommendations of the foregoing certification (ASIIN 6.1).

F Summary: Peer recommendations (06.03.2021)

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

Degree Programme	ASIIN Certificate	Maximum duration of certification	Alignment to a Qualification Framework Level
Associate Degree in Electrical and Electronics Technology	ASIIN	31.12.2027	EQF 5
Associate Degree in Biomedical Equipment Technology	ASIIN	31.12.2027	EQF 5
Higher Diploma in Electrical and Electronics Technology	ASIIN	31.12.2027	EQF 5
Higher Diploma in Biomedical Equipment Technology	ASIIN	31.12.2027	EQF 5

Requirements for all degree programmes

- A 1. (ASIIN 2.2, 7.1) Revise the module descriptions, in particular with regard to the accuracy of the module learning outcomes and contents. Thereby also clearly indicate where students acquire transferable skills (communication, social, team skills).
- A 2. (ASIIN 6.1) Provide evidence that planned or newly adopted methods to close feedback loops in the quality assurance of the programmes, in particular with regard to student involvement, have been implemented sustainably.
- A 3. (ASIIN 7.1) Update the diploma supplements by including the programme-related learning objectives consistent with those published on the respective programme website.

Recommendations for all degree programmes

- E 1. (ASIIN 2.2) It is recommended to specifically monitor on how the adjusted courses in Mathematics for Electronic Technicians and Properties of Electronic Materials affect the study progress of students and their achievement of the intended learning objectives.
- E 2. (ASIIN 2.3) It is recommended to improve the English language proficiency of both the students and the lecturers in order to enhance the occupational perspectives of students in the international labour market.
- E 3. (ASIIN 2.5) It is recommended to establish the already proposed preparatory courses enabling students to catch up with the required knowledge level in Mathematics and Physics.
- E 4. (ASIIN 2.6) It is strongly recommended to use the survey instrument in place in such way that it more reasonably and traceably fits the assigned QA purposes.

A final assessment of the laboratory facilities (ASIIN 5.2) is postponed since the information that could be extracted from the SAR and the remote audit discussions is not sufficient. The peers recommend reserving this assessment to a site visit of one peer of the team and the project manager in 2021, if the pandemic situation allows for that. The Certification commission is suggested to temporally certify the programmes for one year with the reservation of the peers' final assessment of the lab facilities.

G Decision of the Certification Commission (12.03.2021)

Assessment and analysis for the award of the ASIIN Certificate:

The Certification Commission (CC) discusses the procedure.

It understands that EMU through major curricular changes shall be able to support students with (mostly) deficient skills in Mathematics and Physics effectively. Bearing that in mind, the CC members question the necessity of recommending additional tutorial courses in these very subjects (recommendation 3). If students are adequately trained in Mathematics and Physics from the start of their studies, no further support should be necessary. However, the CC learnt that this recommendation in the first place is meant to support the actual student cohort, which is not yet benefitting from the mentioned curricular changes, and thus approves of the recommendation.

In addition, the CC proposes a minor editorial adjustment of recommendation 4 for transparency reasons.

A final assessment of the laboratory facilities (ASIIN 5.2) is postponed since the information that could be extracted from the SAR and the audit discussions is not sufficient. The CC decides to reserve this assessment to a site visit of one peer of the team and the project manager in the course of the fulfilment of requirements.

With the above comments and the latter reservation, the CC agrees to the recommended resolution of the peers.

The Certification Committee decides to award the following certificates:

Degree Programme	ASIIN Certificate	Maximum duration of certification	Alignment to a Qualification Framework Level
Associate Degree in Electrical and Electronics Technology	awarded with requirements	31.12.2027	EQF 5
Associate Degree in Bio-medical Equipment Technology	awarded with requirements	31.12.2027	EQF 5

Degree Programme	ASIIN Certificate	Maximum duration of certification	Alignment to a Qualification Framework Level
Higher Diploma in Electrical and Electronics Technology	awarded with requirements	31.12.2027	EQF 5
Higher Diploma in Biomedical Equipment Technology	awarded with requirements	31.12.2027	EQF 5

Requirements

For all degree programmes

- A 1. (ASIIN 2.2, 7.1) Revise the module descriptions, in particular with regard to the accuracy of the module learning outcomes and contents. Thereby also clearly indicate where students acquire transferable skills (communication, social, team skills).
- A 2. (ASIIN 6.1) Provide evidence that planned or newly adopted methods to close feedback loops in the quality assurance of the programmes, in particular with regard to student involvement, have been implemented sustainably.
- A 3. (ASIIN 7.1) Update the diploma supplements by including the programme-related learning objectives consistent with those published on the respective programme website.

Recommendations for all degree programmes

- E 1. (ASIIN 2.2) It is recommended to specifically monitor on how the adjusted courses in Mathematics for Electronic Technicians and Properties of Electronic Materials affect the study progress of students and their achievement of the intended learning objectives.
- E 2. (ASIIN 2.3) It is recommended to improve the English language proficiency of both the students and the lecturers in order to enhance the occupational perspectives of students in the international labour market.
- E 3. (ASIIN 2.5) It is recommended to establish the already proposed preparatory courses enabling students to catch up with the required knowledge level in Mathematics and Physics.
- E 4. (ASIIN 2.6) It is strongly recommended to use the already existing survey instrument in a way fitting the assigned QA purposes more transparently.

H Fulfilment of Requirements (04.03.2022)

Assessment by the Peer Panel (25.02.2022)

Requirements

For all degree programmes

- A 1. (ASIIN 2.2, 7.1) Revise the module descriptions, in particular with regard to the accuracy of the module learning outcomes and contents. Thereby also clearly indicate where students acquire transferable skills (communication, social, team skills).

Initial Treatment	
Peers	fulfilled <u>Justification:</u> The noted transversal skills were expanded in the modules mentioned in the response letter. Module descriptions are now available on the school's website.

- A 2. (ASIIN 6.1) Provide evidence that planned or newly adopted methods to close feedback loops in the quality assurance of the programmes, in particular with regard to student involvement, have been implemented sustainably.

Initial Treatment	
Peers	<i>not (completely) fulfilled</i> <u>Justification:</u> The school states that the evaluation is conducted twice per course. According to the university, direct feedback is given to the students at the mid-term evaluation. If there is no regulation on this, one has to rely on the statement that the evaluation results are discussed in class. "Evidence" means that ideally the process should be bindingly put into effect. However, the peers have only received a description of how the feedback loop is to be closed. Documents specifying and bindingly regulating the process have not been submitted. An exemplary evaluation for one module was presented in Appendix B. However, it is not clear from this whether the resulting measures are also communicated to the students.

- A 3. (ASIIN 7.1) Update the diploma supplements by including the programme-related learning objectives consistent with those published on the respective programme website.

Initial Treatment	
Peers	fulfilled <u>Justification:</u> The updated Diploma Supplements have been submitted.

Decision of the Certification Commission (04.03.2022)

In accordance with the peers, the CC appreciates the steps being taken by EMU to close the evaluation feedback cycle, in particular with respect to the students and their information about follow-up measures. Yet from the perspective of the CC, the requirement clearly states that EMU should provide *evidence* about any measures taken to fulfil the requirement. The description of the new instrument of a mid-semester evaluation and even an example of how it is actually applied to properly demonstrate the closing of the feedback cycle is not considered as “evidence” in the sense of the requirement. Instead, there should be a formal and reliable commitment to this procedure (for instance through including the process in a binding QA regulation/statute/provision of the HEI).

The other requirements are deemed fulfilled by the Certification Commission.

In accordance with the Commission’s first decision, the final assessment of the laboratory facilities (ASIIN 5.2) is still reserved to a site visit of one peer of the team and the project manager in the course of the fulfilment of remaining requirement (if the pandemic situation allows for travelling).

The Certification Commission decides extending the certificates as follows:

Degree programme	ASIIN certificate	Certification until max.	Alignment to European Qualification Framework Level
Associate Degree in Electrical and Electronics Technology	Requirement 2 not fulfilled <i>Reservation concerning Laboratories</i>	6 months extension, 30.09.2022	5

H Fulfilment of Requirements (04.03.2022)

Degree programme	ASIIN certificate	Certification until max.	Alignment to European Qualification Framework Level
Associate Degree in Biomedical Equipment Technology	Requirement 2 not fulfilled <i>Reservation concerning Laboratories</i>	6 months extension, 30.09.2022	5
Higher Diploma in Electrical and Electronics Technology	Requirement 2 not fulfilled <i>Reservation concerning Laboratories</i>	6 months extension, 30.09.2022	5
Higher Diploma in Biomedical Equipment Technology	Requirement 2 not fulfilled <i>Reservation concerning Laboratories</i>	6 months extension, 30.09.2022	5

I Fulfilment of Remaining Requirement / Assessment of Laboratory facilities (16 December 2022)

Assessment by the Peer Panel (24 November 2022)

a) Fulfilment of Remaining Requirement

A 2. (ASIIN 6.1) Provide evidence that planned or newly adopted methods to close feedback loops in the quality assurance of the programmes, in particular with regard to student involvement, have been implemented sustainably.

Initial Treatment	
Peers	<i>not (completely) fulfilled</i> <u>Justification:</u> The school states that the evaluation is conducted twice per course. According to the university, direct feedback is given to the students at the mid-term evaluation. If there is no regulation on this, one has to rely on the statement that the evaluation results are discussed in class. "Evidence" means that ideally the process should be bindingly put into effect. However, the peers have only received a description of how the feedback loop is to be closed. Documents specifying and bindingly regulating the process have not been submitted. An exemplary evaluation for one module was presented in Appendix B. However, it is not clear from this whether the resulting measures are also communicated to the students.
CC	<i>not (completely) fulfilled</i> <u>Justification:</u> The Certification Commission agrees with the assessment of the peers.
Second Treatment	
Peers	<i>fulfilled</i> <u>Justification:</u> Adequate processes are in place and related binding documents have been presented.

b) Onsite inspection of laboratory facilities

In its initial decision, the Certification Commission decided that the physical/lab resource base of the degree programmes must be evaluated on site for a final assessment and decision about the extension of the accreditation. Due to the pandemic, the onsite visit could only take place on 27 October 2022.

The peers' assessment of the lab facilities is summarized as follows:

Members of the academic staff, who were in charge of all laboratories concerning the bio-medical technician training programme, presented the following laboratories relevant to the audited course:

1. Microcontroller laboratory
2. Automation laboratory
3. Electrical installation laboratory
4. Electronics laboratory with a printed-circuit-board (PCB) facility
5. Bio-medical laboratory

All laboratories, listed above, were well equipped in terms of gadgets and documentation with detailed instructions for the students. All laboratory installations, together with the teaching material each laboratory had to offer, were well matched with learning outcomes stated in the course description. For the vocational qualification, which the audited programmes offer, the laboratories visited revealed no deficiencies of any kind. The facilities visited were found to be entirely at par with international standards.

A particular issue of focus was the biomedical laboratory. This facility makes available to the students some state-of-the-art hands-on equipment and opportunities for gaining laboratory experience in the following areas:

- a. A Nine-Channel Electro-Encephalogram recorder together with the signal simulator for various neurological conditions
- b. A five-channel electrocardiogram recorder together with a signal simulator for diverse cardiological conditions
- c. Respiratory system and its automated control system that is generally employed in anaesthesia-related medical applications
- d. Access to a magnetic resonance tomography (MRT) system at a public hospital that has a co-operation agreement with HEI. The student-participation at this facility requires a full-report on the MRT measurement system and its handling based on the student's experience during his tenure or at this facility. The HEI presented examples of such a report.

In conclusion, the HEI presented convincing evidence towards fulfilling the imposed conditions regarding the laboratory part of the audited qualification.

Suggested action: The reservation regarding practical and laboratory experience could be considered removed.

Recommendation: The HEI should consider adding and implementing an MRT signal simulator, if available (concerning item (d) listed above).

Decision of the Certification Commission (16 December 2022)

The Certification Commission discusses the expert group's assessment of the laboratory facilities and fully agrees with their judgment.

The Certification Commission decides on the extension of the certification seals as follows:

Degree programme	ASIIN certificate	Certification until max.	Alignment to European Qualification Framework Level
Associate Degree in Electrical and Electronics Technology	All requirements fulfilled	31.12.2027	5
Associate Degree in Biomedical Equipment Technology	All requirements fulfilled	31.12.2027	5
Higher Diploma in Electrical and Electronics Technology	All requirements fulfilled	31.12.2027	5
Higher Diploma in Biomedical Equipment Technology	All requirements fulfilled	31.12.2027	5

Additional recommendation:

(ASIIN 5.2) The HEI should consider adding and implementing an MRT signal simulator, if available.