

Akkreditierungsagentur für Studiengänge  
im Bereich Gesundheit und Soziales  
Accreditation Agency for Study Programs  
in the Area of Health and Social Science



## **Assessment Report**

**for the Application of  
Beirut Arab University, Lebanon,  
Faculty of Health Sciences,  
Medical Laboratory Technology Department,  
for the Accreditation of the Study Program  
Bachelor of Science (B.Sc.) in “Medical Laboratory Technology”**

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<b>Decision</b>	July 25, 2017

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<sup>1</sup> The experts shown in italics have not participated in the on-site visit of the University.

## Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>4</b>
<b>2</b>	<b>Overview .....</b>	<b>7</b>
<b>2.1</b>	<b>Procedure-related documents .....</b>	<b>7</b>
<b>2.2</b>	<b>Study program .....</b>	<b>8</b>
2.2.1	Structural data .....	8
2.2.2	Qualification objectives and employment opportunities.....	10
2.2.3	Modularization and exam system.....	12
2.2.4	Admission requirements .....	20
<b>2.3</b>	<b>Study conditions and quality assurance .....</b>	<b>20</b>
2.3.1	Human resources.....	20
2.3.2	Facilities .....	22
2.3.3	Quality assurance .....	24
<b>2.4</b>	<b>Information about the University .....</b>	<b>27</b>
<b>3</b>	<b>Expert Report .....</b>	<b>30</b>
<b>3.1</b>	<b>Preliminary remarks .....</b>	<b>30</b>
<b>3.2</b>	<b>Basic information about the study program .....</b>	<b>32</b>
<b>3.3</b>	<b>Expert Report.....</b>	<b>33</b>
3.3.1	Program aims and their implementation .....	34
3.3.2	Structure of the study program .....	35
3.3.3	Admission and Feasibility .....	38
3.3.4	Examination system and transparency.....	40
3.3.5	Teaching staff and material equipment .....	42
3.3.6	Quality assurance .....	44
3.3.7	Gender equality and equal opportunities .....	45
<b>3.4</b>	<b>Summary.....</b>	<b>46</b>
<b>4</b>	<b>Decision of the accreditation commission.....</b>	<b>48</b>

## 1 Introduction

The Accreditation Agency for Study Programs in Health and Social Sciences (AHPGS) is an interdisciplinary and multi-professional organization. Its mission is to evaluate Bachelor and Master's programs in the fields of health and social sciences, as well as in related domains, such as healthcare or medicine. By implementing accreditation and recommendation procedures, the AHPGS contributes to the improvement of the overall quality of teaching and learning. However, the higher education institutions remain responsible for fulfilling the quality assurance, too.

Since 2004 the AHPGS has been a member of the European Consortium for Accreditation (ECA). In 2006, the AHPGS also joined the ENQA and became a member of the International Network for Quality Assurance Agencies in Higher Education (INQAAHE) in 2009. Since 2012, the AHPGS has been a member of the Network of Central and Eastern European Quality Assurance Agencies in Higher Education (CEENQA). Starting from 2009, the AHPGS has been listed in the European Quality Assurance Register (EQAR).

In carrying out accreditation procedures, the AHPGS follows the requirements of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). In the present case, the decision regarding the accreditation of the study program is carried out by the AHPGS Accreditation Commission based on the following accreditation criteria<sup>2</sup>:

1. Program aims and learning outcomes
2. Curriculum design
3. Personnel
4. Facilities and learning resources
5. Study process and student assessment
6. Program and quality management
7. Gender equality and equal opportunities

The external assessment procedure is carried out in four steps:

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<sup>2</sup> Approved by the AHPGS Accreditation Commission

## **I. The University's application**

The AHPGS verifies the sufficiency of the documents submitted by the University, namely the self-evaluation report and its corresponding annexes. These are to fulfill the assessment spheres as well as the AHPGS standards. As a result, the AHPGS produces a summary (see below), which is to be approved by the University and subsequently made available for the expert group, together with all other documentation.

## **II. Written review**

Parallel to the first step, the main documents are reviewed by the expert group assigned by the accreditation commission of AHPGS. This is done in order to verify the compliance of the study program with the applied accreditation criteria. Consequently, the written reviews of the experts are comprised together.

## **III. On-site visit (peer-review)**

The experts carry out the on-site visit at the University. In the course of the on-site visit, the expert group holds discussions with various members of the University, including the University and college administrative representatives, the program management, teaching staff and a group of students. Such extensive discussions provide the expert group with additional information and a better insight into the structure and content of the program.

The task of the experts during the on-site visit is to verify the rationality of the program's objectives and learning outcomes and their correspondence to the needs of the current and expected labor market situation, to evaluate the sufficiency and effectiveness of the teaching staff, material resources, and methods of assessment (admission requirements, assessment of achievements, students' support), as well as of the program management (program administration, internal and external assurance of study quality).

Following the on-site visit, the expert group issues the expert report for the study program. This is based on the results of the on-site visit, the documents submitted by the University and the experts' considerations based on these documents. The expert reports are made available to the University to issue a response opinion.

The expert report, as well as the University's response opinion – together with the application documents – is submitted to the Accreditation Commission of the AHPGS for the final decision.

#### **IV. The AHPGS accreditation decision**

The Accreditation Commission of the AHPGS examines the documentation made available, namely the University's application documents, the summary comprised by the AHPGS, the Expert Report and the University's response opinion. These documents represent the basis for the decision of the Accreditation Commission of the AHPGS, which can be formulated in three ways: accreditation, accreditation with conditions or denial of accreditation.

## 2 Overview

### 2.1 Procedure-related documents

Beirut Arab University (hereinafter “the University”) assigned the AHPGS to carry out the accreditation of the bachelor study program “Medical Laboratory Technology.”

The University submitted the Self-Evaluation Report (hereinafter referred to as SER) and the relevant annexes of the bachelor study program “Medical Laboratory Technology” to the AHPGS in electronic form on December 9, 2016. The contract for the assessment and the accreditation of the study program (without the awarding of the official seal of the Accreditation Council of the Foundation for the Accreditation of Study Programs in Germany) was signed by the University and the AHPGS on September 11, 2015.

On February 16, 2017, the AHPGS forwarded the open questions (OQ) pertaining to the application documents of the study program to the University. On March 6, 2017, the University submitted the answers to the open questions (AOQ) and explanatory notes to the AHPGS in electronic form.

This document presents the summary of the study program “Medical Laboratory Technology” prepared by the AHPGS.

The Self-Evaluation Report submitted by the University follows the outline recommended by the AHPGS. Along with the Self-Evaluation Report, the University provided the following documents:

<b>Annex</b>	<b>Description</b>
1	Module Descriptions
2	Clinical Rotation Manual
3	Official Clinical Site Agreement
4	Status Report Volume II
5	CVs of Staff
6	International Benchmarks
7	Inter Institutional Agreement
8	Hammoud Agreement
9	Lebanese Army Agreement
10	Makassed Agreement

Alongside the study-program-specific documents, the following documents pertain to “Medical Laboratory Technology”; “Nursing” and “Nutrition and Dietetics”, which are all submitted for external evaluation:

<b>Annex</b>	<b>Description</b>
A	Rules and Regulations
B	BAU Student Manual
C	BAU Strategy 2013-2018
D	Research Policy
E	BAU Code of Ethics
F	BAU Policies and Bylaws
G	Academic Advising for the Undergraduate Programs
H	BAU Guidelines for Effective Student Assessment
I	Institutional Review Board
J	Faculty of Health Sciences Status Report Volume I 2015-2016
K	Faculty Hiring
L	University Centers Offices and Departments
M	Consultancy Agreement
N	BAU Grading Policy
O	Quality Assurance Center

The Summary, the Expert Report as well as the decision of the Accreditation Commission build the basis for the present Assessment Report.

## **2.2 Study program**

### **2.2.1 Structural data**

University	Beirut Arab University (BAU)
Faculty/Department	Faculty of Health Sciences (FHS), Department of Medical Laboratory Technology
Cooperation partner	Al-Makassed General Hospital Medical Laboratories - Beirut; Sahel General Hospital - Beirut; Dar Al-Ajaza Al-Islamia Hospital - Beirut;



	Central Military Hospital - Beirut; "Modern Laboratories" (private) - Beirut; "Medical Analysis and Pathology laboratory (M.A.P.)" (private) - Beirut; Hammoud Hospital Medical Laboratories - Sidon; Al-Raii Hospital - Ghazieh
Title of the study program	"Medical Laboratory Technology" (MLT)
Degree awarded	Bachelor of Science (B.Sc.) in "Medical Laboratory Technology"
First cohort admitted	2008/2009
Language of instruction	English
Form of studies	Full time, on-campus, day-time
Organizational structure	Monday-Friday; 8:00 am to 4:00 pm
Semester structure	Fall: September Spring: February Duration: 15 weeks + two examination weeks Summer: June (eight weeks)
Period of education	Three years: Six semesters and two summer terms
Credit Points (CP) according to the Credit Hour system	100 credit hours
Hours/CP	1 lecture contact hour = 1 credit 2/3 hours of tutorial, practical or clinical classes = 1 credit (Each credit point requires 2 hours of self-study.)
Workload	<b>Total: 2,970 hours</b> Contact hours: 1,095 hours Self-study: 915 hours Practice: 960 hours
CP for final paper	No final paper required for graduation
Launch date of the study program	Academic year 2008/2009
Time of admission	Each winter semester
Number of available places on the program	50 students/ year

Number of enrolled students to date	340
Number of graduates to date	165
Number of dropouts to date	49, including 4 who were dismissed for inadequate performance
Particular enrollment conditions	Entrance exam (held twice annually); English test; Aptitude Test (Thinking Skills, Scientific Knowledge: Biology, Chemistry, Physics); Interview
Tuition fees	The average fee per semester is around \$3,500; tuition fees are charged per Credit Hour (SER 1.1.11).

Table 1: Structural data of the study program

### 2.2.2 Qualification objectives and employment opportunities

The University provided a list of the intended learning outcomes (ILO) of the bachelor study program “Medical Laboratory Technology” (MLT) according to the following categories: knowledge and understanding, intellectual skills, professional and practical skills, general and transferable skills (see Annex 4, pp. 4-6).

The main objective of the study program “Medical Laboratory Technology” is to provide students with skills and competences that will prepare them for careers in the health industry, particularly in specialized medical laboratories. The program graduates are care professionals who perform test procedures in the hospital clinical laboratories or in private medical laboratories and are trained to work with complex laboratory instruments and devices or in the development of laboratory information systems.

In terms of qualification-specific knowledge and competences, the program aims to prepare qualified professionals with competence in all areas of laboratory practice (Hematology, Chemistry, Immunology/Serology, Blood Bank, Histology, Microbiology and Parasitology). Thus, graduates will be able, amongst others, to perform critical tests that aid in the diagnosis, prognosis and treatment of diseases, to identify normal and abnormal blood cells to assist with diagnosis; to perform chemistry tests to measure, for instance, blood glucose, heart enzymes and drug levels; to quickly run procedures to

ensure the providing of safe units of blood; and identify bacteria, viruses, fungi and parasites. Moreover, program graduates are able to carry out their work applying health and safety practices to protect themselves, patients, co-workers, and the environment.

With regard to the aspect of social responsibility, the program is expected to educate individuals who are aware of the duties and responsibilities towards the patient as well as other members of the healthcare team (SER 1.3.2). The program seeks to enhance both academic and human development of the students and thus aims to create various individual characteristics such as independence, trustworthiness and imagination, self-learning to grow morally, ethically, cognitively and behaviorally (ibid.).

In order to be officially professionally recognized as licensed MLT undergraduates, MLT technologists are required to undertake the oral entry-to-practice exam (colloquium) issued by the professionals at the Ministry of Public Health, in addition to completing all credits necessary for graduation. Passing this qualification exam is a mandatory requirement for graduates in order to work as licensed medical laboratory technologists. The MLT department holds a mock colloquium at the end of the third year to prepare prospective graduates (Annex 4 p.2).

Graduates of the program “Medical Laboratory Technology” are expected to find employment in multiple areas on the public health sector (health centers, public health departments) as well as in the private sector, which offers job opportunities (hospitals, private laboratories, clinics, blood banks, pharmaceutical companies, industry, academic and research institutions).

The University states that, although no current and valid statistical data is available regarding the actual market of Medical Laboratory Technologists in Lebanon, the ‘National Health Statistics Report in Lebanon’ in collaboration with the WHO published in its 2012 edition that there are 302 hospitals and private labs in Lebanon. Despite that Lebanon’s economy may be struggling with a crisis, Lebanon’s government issued 2,585 licenses for the opening of new health facilities in 2010 alone and this number is estimated to increase, thus increasing the needs of the country for allied medical health professionals, including laboratory technologists.

Students may also pursue higher education degrees, which according to the University, can open up new opportunities (Annex 4, p.2). Additionally, the University recently opened a Master study program in Infection Prevention and Control that is open for Medical Laboratory Technology graduates, while other students choose to continue their studies in Biology or Biochemistry, as well as at other universities around Lebanon and Europe.

An alumni survey on graduates from 2013-2016 was conducted with a total response rate of 66% (94 graduates). Of these, 20% are undertaking Master coursework, 35% work in medical laboratory technology positions at hospitals or private laboratories, 29% are working in other capacities (as teachers, medical representatives, etc.) and 16% are unemployed.

### 2.2.3 Modularization and exam system

According to the regulations of the University, an academic year consists of a fall semester (commencing in September) and a spring semester (commencing in February) that last for 15 weeks each and end with a two-week examination period. The summer term (commencing in June) spans a period of eight weeks (including a one-week examination period). Credit hours obtained in the summer semester are calculated into the spring semester grades of the same academic year (Annex A, XII). The courses offered for the MLT study program are designed to span a period of three years; that is, six semesters and two summer terms.

The University applies the system of credit hours, where one credit hour is used as a standard to measure and specify the workload of students per semester. One credit hour is equal to one contact hour of lectures and to two or three hours of tutorial, practical and/or clinical classes per week (Annex A).

Every faculty defines the minimum number of credits required for graduation. The Bachelor study program "Medical Laboratory Technology" requires 100 credit hours for graduation. These credits are obtained in **Mandatory Core Courses (MCC)** and **General University Requirements (GUR)**, which must be completed by all students in the program, as well as **Major Elective Courses (MEC)**, a set of courses that students can select in order to fulfill the number of elective credits required in the program. The offered courses for MLT are listed in Annex 4: p. 50.

**General University Requirements (GUR)** are a set of courses designated by the University to ensure that all students acquire a broader knowledge. These courses include **University Mandatory Courses (UMC)** and **University Elective Courses (UEC)**.

In the course of the Bachelor study program “Medical Laboratory Technology” a total of 39 courses have to be absolved successfully in three years of studies:

- Mandatory Core Courses (MCC) (75 credit hours), consisting of:
  - Basic Science Courses (BS)
  - Foundational Medical Laboratory Sciences Courses (FMLS)
  - Pre-Clinical Professional Courses (PCP)
  - Clinical Professional Courses (CP)
- General University Requirements (GUR) (16 credit hours), divided into:
  - University Mandatory Courses (UMC) (7 credit hours)
  - University Elective Courses (UEC) (9 credit hours)
    - Major Elective courses (MEC) (9 credit hours)

The students register for up to seven courses in one semester and can obtain twelve to 18 credits in one semester. All courses are completed within one semester or one summer term. The first and second academic years award 38 and 37 credit hours, respectively, and the last year 24 credit hours, along with two summer terms of five to seven credit hours each, depending on the number of optional courses attended (SER 1.2.1). This results in a total program workload of 2,970 hours.

The list of courses offered according to the academic program sheet (Annex 4: pp. 18-25):

Semester	Course Nr.	Title	Subject Type	Course Type	CP
First Semester (Fall)	BIOL 223	Basic Biology	BS	MCC	3
	CHEM 213	General Chemistry	BS	MCC	3
	CHEM 215	Organic Chemistry	BS	MCC	3
	HESC 201	Human Anatomy and Physiology	BS	MCC	3
	COMM 201	Epidemiology and Biostatistics	BS	MCC	3
	BLAW 001	Human Rights	UMC	GUR	1
	ENGL 001	English	UMC	GUR	2
<b>Total:</b>					<b>18</b>
Second Semester (Spring)	BCHM 215	Biochemistry	BS	MCC	3
	BIOL 226	Microbiology	BS	MCC	3
	HESC 202	Healthcare Profession and Bioethics	FMLS	MCC	1
	MELS 202	Evidence-Based Laboratory Research	FMLS	MCC	1
	MELS 204	Principles of Medical Laboratory Sciences	FMLS	MCC	3
	ARAB 001	Arabic Language	UMC	GUR	2
<b>Total:</b>					<b>13</b>
Summer I	BGMT 002	Entrepreneurship	UEC	GUR	2
	SOCI 001	Introduction to Sociology and Psychology	UEC	GUR	2
	-	<i>Free choice electives</i>	MEC	MEC	3
<b>Total:</b>					<b>7</b>
Third Semester (Fall)	MELS 301	Virology and Mycology	CP	MCC	3
	MELS 303	Medical Parasitology	CP	MCC	3
	MELS 305	Clinical Laboratory Hematology	CP	MCC	3
	MELS 307	Clinical Laboratory Immunology	CP	MCC	3
	MELS 309	Quality Control and Laboratory Management	PCP	MCC	3
	SOCI 002	Communication Skills	UM	GUR	2
<b>Total:</b>					<b>17</b>

Fourth Semester (Spring)	IPEH 512	Interprofessional Education for Healthcare	FMLS	MCC	1
	MELS 302	Toxicology for Medical Laboratory	CP	MCC	3
	MELS 304	Clinical Chemistry	CP	MCC	3
	MELS 306	Blood Banking and Transfusion Medicine	CP	MCC	3
	MELS 308	Clinical Laboratory Bacteriology	CP	MCC	3
	-	<i>Electives</i>	UE	GUR	3
<b>Total:</b>					<b>16</b>
Sum- mer II	-	<i>Electives</i>	UE	GUR	2
	-	<i>Electives</i>	ME	MEC	3
<b>Total:</b>					<b>5</b>
Fifth Semester (Fall)	MELS 401	Genetics and Molecular Biology	PCP	MCC	3
	MELS 403	Histopathology	CP	MCC	3
	MELS 405	Clinical Rotations I	CP	MCC	4
	-	<i>Electives</i>	ME	MEC	3
<b>Total:</b>					<b>13</b>
Sixth Semester (Spring)	MELS 402	Diagnostic Laboratory Procedures	CP	MCC	3
	MELS 404	Laboratory Body Fluid Analysis	CP	MCC	3
	MELS 406	Clinical Rotations II	CP	MCC	4
	MELS 408	Clinical Seminar	CP	MCC	1
<b>Total:</b>					<b>11</b>
				<b>Total:</b>	<b>100</b>

Table 2: Study Plan

Please refer to the module descriptions (Annex 1) for detailed information on the modules, including the level, the amount of assigned credits, language of instruction, pursued learning outcomes and skills, content of studies and examinations foreseen in every course of the program. The following modules are studied with students from other faculties:

- University Mandatory Courses:  
Arabic (ARAB001), English (ENGL001), Human Rights (BLAW001), Communication Skills (SOCIO02)

- University Elective Courses:  
A list of possible courses can be found in Annex 4: pp. 52-57).
- Basic Sciences Courses:  
Basic Biology (BIOL223), General Chemistry (CHEM213), Biochemistry (BCHM215), Human Anatomy and Physiology (HESC201), Microbiology (BIOL226), Organic Chemistry (CHEM215), Epidemiology and Biostatistics (COMM201)
- Foundational Medical Laboratory Sciences Courses:  
Healthcare Profession and Bioethics (HESC202), Interprofessional Education for Healthcare (IPEH512)

The specifications of these courses are designed and appraised by the faculty members and the quality assurance member of the Medical Laboratory Department in collaboration with the course instructors in order to assure specific objectives (SER 1.2.2).

The study program's courses build upon one another. The first year courses, in "Basic Sciences" are required to equip the students with a sound scientific and medical knowledge that is necessary to comprehend the professional and practical skills needed in the advanced courses. Under the category of "Foundational Medical Laboratory Sciences" (6 CP) and "Pre-Clinical Professional Courses" (6 CP), courses are necessary to introduce students to professionalism including work ethnics, healthcare profession, research, evidence-based practice, patient care, quality control and management. The "Clinical Professional Courses" of this program are attended throughout the second and third year of studies, where students are provided with theoretical background and relevant laboratory skills. During this professional phase, students will also rotate through the laboratories of the affiliated hospitals in order to gain practical skills of the acquired knowledge (SER 1.3.4).

Students are phased into the program with simulated laboratory environments with 600 total contact hours in the study program before being placed into real clinical settings in semesters 5 and 6 with a total of 360 contact hours.

According to the "Clinical Rotation Manual" (Annex 2), students have to complete clinical rotations in the fields of phlebotomy, hematology, bacteriology, parasitology, immunology/serology, blood banking, clinical chemistry and his-



topathology. These rotations can stretch one to two weeks (Annex 2: p.13); however, this varies depending on the facilities at the clinical site. Students are expected to attend the rotation daily and are withdrawn from the course, if the absence percentage exceeds 20%. Students are expected to fully integrate into the daily work life and learn about professional appearance and behavior, as well as laboratory safety and biosafety levels. Students are evaluated after the rotations.

The modules "Clinical Rotation I and II" (MELS 405/406) during the fifth and sixth semester have to be completed at cooperation partner sites of the University listed in Annex 2: p.7. For more detailed information on ILOs and general information on clinical rotations, please refer to Annex 2 "Clinical Rotation Manual". For more information on the specific content of MELS 405/406 please refer to Annex 1 (Module Descriptions).

The University cooperates with six local hospitals – "Hammoud Hospital Medical Laboratories," "Al-Makassed General Hospital Medical Laboratories," "Central Military Hospital," "Al-Raii Hospital," "Dar Al-Ajaza Al-Islamia Hospital" and "Sahel General Hospital" – in order to provide students' rotations and laboratory clinical training (see Annexes 8-10). Hospitals are provided with the course specifications stated in the module description, the student evaluation forms (Annex 2: pp. 32-33) and the Clinical Rotation Manual for the students to prepare for their training report (Annex 2: pp. 34-39). At the training site, students are oriented before commencing their rotations. In addition, students observe and are trained to operate equipment and perform tests, usually under the supervision of certified medical technologists or the technician-in-chief of each department (SER 1.2.6). For more information please refer to Annex 2 (Clinical Rotation Manual).

Clinical rotations are overseen by two senior faculty members. The MLT Department has assigned a faculty member for the overall supervision of the clinical rotations, named the Clinical Coordinator. The Clinical Coordinator acts as a link between the MLT department and the Clinical Rotation sites, and reports periodically and continuously to the program coordinator (usually the Head of Department). The Clinical Coordinator is responsible for

- coordinating and ensuring the effectiveness of clinical instruction at the site,
- monitoring and evaluating students' clinical performance, and

- maintaining effective communication between the department and the clinical sites.

Concerning the teaching methods used for the study program, the Department of Medical Laboratory Technology aims at leaving didactic, teacher-centered methods of teaching behind and turns towards a more active, student-focused method, in which students are more engaged in the learning process. In addition, students are also provided coaching sessions during the faculty office hours, in order to meet their advisors or faculty members and explore topics directly related to their assignment. For every 3 credit hour course there is at least one office hour students can attend to, in order to explore the topics directly related to their assignment (SER 1.2.4).

The classrooms and lecture theaters at the Department of Medical Laboratory Technology are all equipped with data-shows, PCs and sound system, which provide a dynamic and interactive environment for utilization of various multimedia forms. In addition, the University has a secure academic website, which provides students, faculty and administrative staff with an intranet and internet services. The website also provides a portal to access databases and the library web page (SER 1.2.5).

In addition the student information system (Banner) through which student-related operations and processes are performed, such as acceptance, registration processes, fees, grades and transcripts (SER 1.2.5).

There are no e-learning or distance learning services at the faculty. The language center at BAU provides an intensive online English course (INTEA 104) through the Auralog program (SER 1.2.5).

The Self-Evaluation Report states that the University has established the program according to international and national benchmarks (please refer to Annex 6). In addition, the study program is taught solely in English, with the exception of the course "Arabic Language (ARAB 001)".

Students are given the possibility to pursue studies abroad. In addition, the "International Relations Office" at BAU aims to promote and implement international agreements, in addition to supporting international staff and student mobility (SER 1.2.6). A specification of semesters to go abroad or a list of recommended exchange universities is not given. The University is involved in several exchange programs and international projects, mainly with the Europe-

an Union (EU) institutions, within the frameworks of TEMPUS and ERASMUS MUNDUS projects (please refer to Annex 7). In addition the University has participated in the following three projects:

- “Egypt Lebanon EU Mobility Exchange Network” (ELEMENT) (2011-2015)
- “Program for Excellence Academy Cooperation Exchange” (PEACE) (2012-2016)
- “Program for Excellence Academy Cooperation Exchange” (PEACE II) (2012-2016)

In the current strategy (SER 1.2.9; Annex C), BAU encourages such projects and is working to encourage international student mobility, to support the exchange of international staff, and to facilitate the procedures for credit transfer.

The Department of Medical Laboratory Technology integrates research into the study program through courses, such as “Evidence Based Laboratory Research,” and a system for course-based assignments, throughout which students integrate current concepts and understanding in medical laboratory with research-oriented approaches by searching online and University available library databases. Faculty members also integrate research in their teaching by presenting relevant examples of current research in lectures. Lastly, students in the departments are also engaged in generating and presenting a seminar on current laboratory themes, rapid tests and cutting-edge discoveries in the field and are also encouraged to participate in research activities (SER 1.2.7).

The evaluation and grading system of the University is described in the “Rules and Regulations for Undergraduate Programs” (Annex A). The University differentiates between the Course Grade Point Average (GPA), the Semester Grade Point Average (SGPA) and the Cumulative Grade Point Average (CGPA) for the whole period of studies (Annex A, Chapter V). Student performance is assessed based on a letter grade (A- F) which is evaluated numerically with a grade point average (GPA) system (4.00- 0.00) (Annex B: VII.13). For more information please refer to SER 1.2.3, Annex A (Rules and Regulations) and Annex B (Student Manual).

## 2.2.4 Admission requirements

Admission policies and procedures along with the requirements are listed in the “Rules and Regulations for the Undergraduate Programs” (Annex A). In order to be accepted to the study program, students must complete the admission process for BAU and the program’s requirements (SER 1.5.1 and Annex 4: admission requirements):

- Hold the official Lebanese Secondary School Certificate or its official equivalent issued by the Lebanese Ministry of Education & Higher Education.
- Pass an entrance exam which is held twice annually (April, July) as well as an interview.
- Pass the BAU English Language entrance exam with grade not less than 60%, TOEFL Exam with a minimum score of 500, IELTS Exam with a minimum score of 5 or the SAT I writing with a minimum score of 380. Should the English exam not be passed, the student will have to enroll for intensive English course provided by the University.
- After being accepted and before registration, students have to perform certain medical tests. According to the Faculty of Health Sciences, all immunizations must be verified by a health care provider. The hepatitis series must be started and all other immunizations completed prior to the first day of class. Meet with the MLT program advisor regarding application, program admission and development of program of study.

## 2.3 Study conditions and quality assurance

### 2.3.1 Human resources

A total of 9 staff members are needed in order to complete the instruction of the study program (SER 2.1.1).

The University assures that three full-time core academic faculty members are assigned for the Department of Medical Laboratory Technology, one professor and two assistant professors. The expected teaching load for core academic faculty members averages about 15-25 contact hours/week. Part time faculty teaching hours will be based on the type of agreement with the University. Further policies on duties and responsibilities of the faculty number according to the rank and position are specified in the “BAU policies and bylaws” (Annex

F: chapter III) and in the “Teachers CVs” (Annex 5). In addition, there are a total of six adjunct professors, who contribute to teaching the program.

In regard to further human resources, the Department of Medical Laboratory Technology assigns two faculty members to oversee clinical rotations in campus and in hospital venues (SER 2.2.1). Two full-time lab managers as well as four part-time lab instructors are available for tutoring practical sessions, lab management and maintenance (SER 2.3.1).

The student/faculty ratio based on full-time instructors is 25:1, with 126 students, three full-time core academic faculty members and two full-time lab instructors in academic year 2015/2016. The student/faculty ratio including the program’s six adjunct professors is 11:1 (SER 2.1.1).

Out of the 100 total credit hours, 84 are core courses and basic science courses, which are taught by core and adjunct professors of the Faculty of Health Sciences comprising 84% of the total program credits. The remaining 16 CP for University requirements courses are taught by members from other faculties in the University (SER 2.1.1).

The University has regulations for hiring and retaining teaching staff (Annex K). Depending on the needs of the academic program, the head of the department submits a request with justification to hire faculty member in a definite specialty and research background. The request has to be approved by the University council. BAU continuously monitors the performance of both academic and non-academic staff to ensure that their qualifications and capabilities fit the positions requirements (see Annex F, chapter III.).

The University assures to focus on the academic staff development to enhance the capabilities of its staff by providing them, whenever possible, with professional-development workshops and training courses that are usually organized by the Deanship of Academic Development and Quality (SER 2.1.3; Annex M). According to the University, BAU also encourages the participation of academic and non-academic staff in Tempus and Erasmus Mundus programs to give them the opportunity to recognize new practices that enhance their skills, performance and attributes. All faculty members are also encouraged to attend national and international conferences, symposia and workshops, by giving them financial support for transportation, registration fees

and living allowance for the event duration as well as to publish their scientific research works in top ranked journals (SER 2.1.3; Annex D: Goals).

### **2.3.2 Facilities**

The Faculty of Health Sciences, of which the Department of Medical Laboratory Technology is part, is located in the fifth and sixth floor of the Hariri building on the Beirut campus. That space encompasses six classrooms, teaching offices, the dean's office, the registrar's office, the student affairs office, faculty members' offices, the Biomedical laboratories, the Nutrition and Dietetics Laboratory and outpatient clinic, the Nursing Simulation Laboratory, physical therapy outpatient clinics, a quality assurance room and the Medical Sciences Library. The Hariri building also hosts two other medical sector facilities, Medicine and Pharmacy. The Medical Laboratory Technology department is located at the sixth floor.

For carrying out the practical training during the study program, the department utilizes five laboratories: a biomedical laboratory, a biology laboratory, a general chemistry laboratory, an organic chemistry laboratory and a biochemistry laboratory. Additionally, the department cooperates with a variety of hospital and private laboratories (Annex 4, chapter VI). The detailed equipment available in the laboratories is listed in the department's status report (Annex 4, chapter VI). Two full-time Laboratory managers are always available to instruct, demonstrate and assist students with experimental setup as well as keep up with basic maintenance and calibration of equipment. All laboratory experiments and instructions are available in the Laboratory manuals; besides, health and safety guidelines are posted inside and outside the lab to ensure the safety of students.

The University contains eight libraries spread among the Beirut site, Debbie site, and Tripoli branches. The Medical Sciences Library is located on Beirut and on Tripoli campus and serves students of all Medical Sector Faculties of the University. The library can accommodate 114 users in Beirut Campus and 72 users in Tripoli campus at the same time which can benefit from the photocopying, printing and scanning machines available to serve users' needs. Interlibrary and interlibrary loan services are also available (SER 2.3.2; Annex J: pp. 60-61).

The Library of Health Sciences contains 792 books, 11 dissertations and 150 multimedia items in the Beirut Campus (Annex J: p. 60). The inventory can be found in physical or electronic format. Students also have access to several electronic library full-text databases, such as Science Direct, Scopus, Access Medicine, CINAHL Plus and MEDLINE Complete. For more information please consult Annex J, chapter 5 and SER §2.3.2.

At the faculty level, the library committee, which is chaired by a faculty member, ensures the preparation of the list of needed books and periodicals for the library upon the faculties' requests to satisfy students' learning needs. The library acquisition department will process and follow up on purchasing and receiving the books. The bibliographic information of new books will be catalogued. An electronic list of new arrivals will be issued to faculties concerned to be distributed to faculty members. Then books will be delivered to the Medical sciences library (SER 2.3.2).

The University library has an agreement with the Lebanese Academic Library Consortium (LALC) since 2011, to attain better prices from suppliers for electronic resource subscriptions (SER 2.3.2).

Library opening hours are between 8:00 a.m. and 8:00 p.m., Monday through Thursday, on Friday from 8:00 a.m. to 4:00 p.m.

Students have access to the multi search database "EBSCO", which enables them to inquire in other databases. This service is offered free of charge to all faculty, staff and registered students through the BAU portal system "I-connect". Through this portal students will have access to an automatically add or drop their courses, manage their schedules, look up information about examination, their grades and cumulative GPA. Furthermore, "I-connect" enables students to check their emails and keep online communication between them and their instructors. This tool also allows instructors to send their students announcements regarding exams, assignments and can safely upload the lecture notes on it. This system provides remote and on campus access to the electronic library using subscription credentials. Mobile access is also available using the QR-code Reader App (SER 2.3.2; SER 1.6.7).

A computer lab, offered by the University, is also available for students to allow them internet access. Recently, BAU has begun providing campus-wide wireless internet for all its registered students (SER 2.3.1).

### 2.3.3 Quality assurance

Beirut Arab University has a Quality Assurance Center (UQAC), whose main function is to evaluate the academic performance of different faculties and to facilitate the improvement of the educational process within the institution (Annexes O and F). Every faculty of the University has a Quality Assurance Unit that is supervised by the faculty dean.

The quality assurance system of the University includes the following procedures:

- Course evaluation questionnaires, in which students evaluate the quality of teaching and learning, conducted online through I-connect,
- Students' satisfaction survey (Exit Survey), in which students evaluate the availability of learning resources and the support offered by the University and its units,
- Preparation of the staff development program in order to improve the qualifications of the academic staff members,
- Academic staff-members evaluation, which is monitored by the dean of the faculty,
- The University's Quality Assurance Committee carries out site visits of each faculty once per semester in order to monitor the academic performance with a special focus on undergraduate programs and the experiential learning ones. The Committee of the QAC prepares a visit report and forwards it to the University President, who then sends a copy of the report to the relevant dean to take appropriate actions.

In 2015, the University attained the institutional accreditation by a German accreditation agency (SER 3.1.1).

In the Medical Laboratory Technology (MLT) department, the curriculum has been achieved and enhanced based on international benchmark standards (please refer to Annex 6). This continuous enhancement is supervised by the faculties' quality assurance units (FQAU) and the University Quality Assurance Center (UQAC), which both perform regular internal auditing to assess the academic performance of the department and make sure the curricular changes are compatible with the University rules, regulations and policies.

The University claims to seek excellence in research. Due to this, the University has established a deanship for graduate studies as well as an Institutional



Review Board (IRB) (see Annex I), which is committed to apply BAU research policy (Annex D).

The Department of Medical Laboratory Technology assures that quality assurance is monitored by “everyone”. All members of the department are expected to be involved in curriculum planning and development, meeting monthly at the departmental council to discuss departmental issues and concerns including curricular enhancement, staff members’ issues, students’ issues and quality assurance related issues (SER 1.6.2).

At the beginning of the academic year, a course coordinator is assigned under the supervision of the dean. By the end of each semester, a course report is written related to each course offered during the relevant semester. This report includes basic course information, topics taught and their relevant hours, statistical information about students’ attendance, students’ assessment and examination results, used teaching and learning methods, administrative constraints, students’ evaluation, course enhancement suggestions and an action plan for the following year. Any recommendations regarding revision of the course intended learning outcomes, the assessment method, modification of the course content; requirements for special tools/equipment for implementing the course objectives or any other difficulty faced during the semester are stated in the course report. The course report is then submitted by the termination of the course. Noted issues will be discussed in the departmental council and then raised at the faculty council. The course report will also be analyzed by the UQAC representatives during their regular visits to the faculty every semester to evaluate the academic performance (SER 1.6.3).

Other measures taken for the purpose of course evaluation and enhancement are through feedbacks from stakeholders who are members of the faculty’s Advisory Committee as well as feedback from the students. Moreover, BAU has also included student representatives in the faculty’s committees and councils, to ensure their participation in decision-making, to get their feedback and to ensure their satisfaction (SER 1.6.3).

According to the University, practical relevance of the study program is assessed through feedback obtained from students during their rotations at different hospitals and the evaluation of the instructors from the rotation sites regarding their satisfaction with the students’ performance. In addition, the MLT department follows-up on graduated students working in various set-

tings. The feedback and comments of the stakeholders, who are members of the Advisory Committee of the faculty, are also of utmost priority to assess the study program. The feedback and follow-up data are collected and discussed in the Faculty Council (SER 1.6.4).

The University assures, that all relevant information in concerning the study program is published on the University's website. Information posted includes but is not limited to the mission and vision of the department, program overview with course descriptions, degree requirements and study plan. Also, the I-connect system provides information to the students about their academic requirements; in terms of number of credit taken/left, the complete academic plan and their grades.

In concern with the support of students at the University, every faculty member is assigned as an academic advisor to a group of students providing them with counseling and guidance. The academic advisor assists in course selection and helps solve any issues or problems his/her advisees might encounter throughout their enrollment.

The drop outs during the study process (AOQ 9) are reasoned by the transfer to other BAU study programs, the delay in earning required credits requested for the upper level, the student's withdrawal from the program, or their final dismissal from the University.

All newly enrolled students attend a number of orientation sessions organized by the Student Affairs Deanship with the participation of the staff member of the faculty. New students also receive a student file, brochures and a CD containing information about the faculty and departments, requirements for graduation, duties and rights and the registration for university, faculty and department mandatory and elective courses.

Students are also introduced to the BAU's Code of Ethics (Annex E), a document that is meant to determine the basic ethical standards for the conduct of persons active within the context of the University, to adhere to the freedom of scientific research and teaching, to promote social responsibility and equality amongst individuals regardless of race, religion, family status, gender, age, physical disability or social status and to encourage creative thinking and constructive criticism. In case of violation of the University's Code of Ethics, the dean of the faculty issues a Misconduct Citation to the student's breach of

the University's customs and rules, and/or performing prohibited acts as mentioned in the Code of Ethics and Conduct. If three misconduct citations are issued throughout the enrollment period, students may be suspended by the University Council (Annex A: Rules and Regulations, XII/10).

In regard to the promotion and concept of equality, the University assures that diversity is one of the seven core values of the institution. According to the University's "Code of Ethics" (Annex E), the tolerance and respect of differences of others is to be promoted. In its Strategy 2013–2018 the University states that the facilities for students with physical disabilities have to be secured (Annex C).

## **2.4 Information about the University**

Beirut Arab University is a private non-profit institution for higher education that was founded by the Lebanese El-Bir and Ishan Society in 1960 with the Faculty of Arts (since 2016: Faculty of Human Sciences) and the Faculty of Law. Other faculties were established in the course of the following years, the last of which was launched in 1995. The Faculty of Health Sciences (FHS) was then established in 2008 to meet the rising needs of the local community for professionals specialized in health sciences and is the most recent addition to the Beirut Arab University (Annex J). It hosts the departments of Nursing, Nutrition and Dietetics, Physical Therapy and Medical Laboratory Technology.

The University campus is located in the center of Beirut, Lebanon. The Faculty of Health Sciences is situated on the 5<sup>th</sup> to 6<sup>th</sup> floors of the Hariri Building, which is an annexation to the main campus that was constructed in 1978. In the recent years, the University has established three branch campuses in the cities of Debbie, Tripoli, and Bekaa. At the moment, there are a total number of 8,659 undergraduate and 1,161 postgraduate students enrolled at the University. The University consists of the 10 following faculties, which together offer 42 undergraduate and 87 postgraduate study programs:

- Faculty of Human Sciences
- Faculty of Law and Political Science
- Faculty of Business Administration
- Faculty of Architecture-Design and Built Environment
- Faculty of Engineering
- Faculty of Science

- Faculty of Pharmacy
- Faculty of Medicine
- Faculty of Dentistry
- Faculty of Health Sciences

The University describes itself as an educational institution classified as a non-profit organization. It is described, that BAU's budget and expenses rely mainly on students' tuition fees and all other types of administrative fees that contribute to about 90% of the University's income. BAU has also delivered its stream of revenues in order to develop a new funding model in the light of a highly competitive market. The revenue streams are detailed as follows: BAU specialized clinics (the dental clinics, the nutrition and dietetics clinic); consultancy services, laboratory testing and experimentation; Center for Continuous Professional Development (CCPE); Governmental funds for scientific research projects at BAU such as those coming from the National Council for Scientific Research (CNRS); Philanthropic funding coming mainly from donating bodies. Moreover, the European Union (EU) provides funding through the Tempus Program. In addition, the University has invested in the banking market seeking additional revenue opportunities. According to the University, the initiative was successful, adding a substantial amount of revenues. All funds are directed to finance BAU activities including salaries and the development process in different fields (SER 2.3.4).

The Department of Medical Laboratory Technology was established in the year 2008 as one of the major departments at FHS. Currently, the Department is only offering the degree of Bachelor of Science in Medical Laboratory Technology.

Since the spring of 2014, all students of the Medical Sector Faculties have participated in Interprofessional Education for Healthcare course (IPEH512) as a mandatory requirement for graduation. In IPEH, students encounter clinical case scenarios and try to solve problems using evidence based practice along with students from other medical fields including Medical doctors, pharmacists, dentists, nurses, physical therapists and nutritionists and dietitians. Through interactive learning, students will explore ways in which their professions can work together in order to optimize patient's care while respecting each other's roles and responsibilities.

The University has an official research policy (Annex D) and it considers the contribution to the development of research as one of its main strategies (Annex C). The research facilities of the University include the Institutional Review Board (IRB), which is responsible for the assurance of protection of humans and animals involved in research or related activities (Annex I). Furthermore, the University has a Research Centre for Environment and Development, the Centre for Continuous Education, the Academic Development Centre and other (see Annex L). The University provides also specialized laboratories in each faculty according to the requirements of specializations.

### **3 Expert Report**

#### **3.1 Preliminary remarks**

The Accreditation Agency for Study Programs in Health and Social Sciences (hereinafter AHPGS) was commissioned by Beirut Arab University (hereinafter the University) to accredit the study program Bachelor of Science (B.Sc.) in "Medical Laboratory Technology."

The on-site visit evaluation of the study program B.Sc. "Medical Laboratory Technology," as well as the study programs B.Sc. "Nutrition and Dietetics" and B.Sc. "Nursing," offered at Beirut Arab University, was carried out on May 16 and 17, 2017 in Beirut, Lebanon.

The documents of the University, the feedback from the experts to the documents and the results of the discussions with the representatives of the University during the on-site visit serve as bases for the statements made in the expert report.

The following experts were appointed by the Accreditation Commission of AHPGS for the evaluation of the study program.

**As representatives of higher education institutions and of professional practice:**

**Prof. Dr. Georg Abel**

University of Applied Sciences of Health and Prevention, Saarbrücken, Germany  
Professor of Nutritional Sciences

**Prof. Dr. rer. nat. Friedrich Hofmann, MD**

Bergische Universität Wuppertal, Germany  
Professor emeritus of Occupational Physiology, Occupational Medicine and Infection Protection;  
Member and former Chair of the Permanent Vaccination Commission of the Robert Koch Institute

**Prof. Dr. Johannes Keogh**

Fulda University of Applied Sciences, Germany  
Professor of Nursing Sciences

***Prof. Dr. Kathrin Kohlenberg-Müller<sup>3</sup>***

*Fulda University of Applied Sciences, Germany*

*Professor of Clinical Nutrition*

***Ms. Beate Methke***

*University Hospital Freiburg, Department of Immunology, Germany*

*Medical Technical Assistant*

***Dr. Martina Plaumann, MPH***

*Federal Centre for Health Education, Cologne, Germany*

*Director of the agency of the National Prevention Conference*

***Prof. Dr. Birgit Vosseler***

*University of Applied Sciences, St. Gallen, Switzerland*

*Dean of the Department for Health Care and Vice President of the University;*

*Professor of Nursing Sciences*

***As a student representative:***

***Ms. Franziska Jagoda***

*University of Witten/Herdecke, Germany*

*Master studies in Nursing Sciences*

According to the *Rules for the Accreditation of Study Programs and for System Accreditation* (determined by the decision of the Accreditation Commission, of 08.12.2009 in the version of 20.02.2013, Drs. AR 20/2013), the task of the experts in the accreditation procedures is to evaluate the education concept of a specific study program as well as to estimate the possibility of its successful implementation. This concerns, in particular, qualification objectives of the study program, its conceptual integration into the system of education, the concept of the study program, feasibility of the content and scope of studies, the examination system, study-relevant collaborations, personnel, material and space resources, transparency and documentation, application of the results of quality assurance for further development of the study program (it is especially important to present the analyses and evaluation results of student workload, academic accomplishments and employment of graduates, which are to be documented and taken into account within the framework of continuous development of the study program), as well as the provision of gender equality and equal opportunities. The experts should also take into consideration and verify whether study programs with special profiles (e.g.

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<sup>3</sup> The experts shown in italics have not participated in the on-site visit of the University.

dual, part-time, occupational or distance learning study programs) comply with the relevant criteria and requirements.

The on-site visit of the experts is carried out in accordance with the *Rules for the Accreditation of Study Programs and for System Accreditation* (determined by the decision of the Accreditation Commission, of 08.12.2009 in the version of 20.02.2013, Drs. AR 20/2013) as well as the *Criteria for the assessment and accreditation procedures of study programs at foreign higher education institutions* developed by AHPGS. After the announcement of the accreditation decision, the expert report will be published as a part of the final Assessment Report.

### **3.2 Basic information about the study program**

The main objective of the Bachelor of Science study program “Medical Laboratory Technology” offered at the Department of Medical Laboratory Technology, Faculty of Health Sciences, Beirut Arab University is to prepare competent Medical Laboratory Scientists and laboratory technologists proficient in performing the full range of clinical laboratory tests in areas such as hematology, clinical chemistry, microbiology, serology/immunology, urinalysis, molecular, and other emerging diagnostics. The program is also designed to prepare technologists with a sense of responsibility and professionalism and to work and communicate effectively within a multi-disciplinary health care team to meet the needs of the community and the region, while accounting for professional ethics and being committed to lifelong learning.

The study program requires the obtainment of 100 credit hours (CH) according to the University’s credit hour system referring to the US American credit hour system. One credit hour is equal to one contact hour of lectures or two or three hours of tutorial, practical and/or clinical classes per week. Every credit requires two hours of self-study. The workload of the program constitutes 2,055 contact hours, of which 1,065 are lecture hours, 960 are practical laboratory and clinic hours and 30 are tutorial hours. Additionally, the program requires around 915 hours of independent study. The language of instruction is English.

The bachelor study program “Medical Laboratory Technology” is a full-time study program with a regular duration of three years/six semesters and two



summer semesters. It consists of 39 courses to be covered in three years of studies:

- 4 are University Mandatory Courses (7 credits),
- A minimum of 5 are University Elective Courses (9 credits),
- 7 are Basic Science Courses (21 credits),
- 4 are Foundational Medical Laboratory Sciences Courses (6 credits),
- 2 are Pre-Clinical Professional Courses (6 credits),
- 14 are Clinical Professional Courses (42 credits),
- 3 are Major Elective Courses (9 credits).

Admission requirements of the program include a secondary school certificate or its equivalent. International applicants have to provide an equivalence certificate from the Equivalence Committee of the Lebanese Ministry of Education and Higher Education, which should confirm that their secondary school degree is comparable to a Lebanese one. In addition, students must pass an entrance exam, an interview and the BAU English language exam. Students are informed about the amount of the tuition fees in advance. Upon completion of the study program, students are awarded with the academic title "Bachelor of Science in Medical Laboratory Technology." There are 50 study places annually available in the program. Admission takes place every fall semester. The first batch of students was admitted to the program in the academic year 2008/2009.

### **3.3 Expert Report**

On December 12, 2016, the application documents of the University were made available to the expert group for written evaluation. The expert group assessed the Bachelor study program "Medical Laboratory Technology" based on the above mentioned *Criteria for the assessment and accreditation procedures of study programs at foreign higher education institutions*.

The on-site visit was carried out on May 16 and 17, 2017, according to the previously agreed schedule. Representatives from the head office of AHPGS accompanied the expert group.

The expert group met on May 15, 2017, for preliminary talks prior to the on-site visit. They discussed the submitted application documents and the results of the written evaluation as well as questions that had been raised. Furthermore, they prepared the plan of the on-site visit at the University.

In the course of the on-site visit, experts conducted discussions with the University management, the Deanship and representatives of the Faculty of Health Sciences and the Departments of Medical Laboratory Technology, Nursing, and Nutrition and Dietetics, the teaching staff of the program “Medical Laboratory Technology” and representatives of laboratories cooperating with the Department, as well as with students currently studying in the three programs to be accredited. Furthermore, they inspected the learning premises, such as lecture halls, seminar classrooms, laboratories, the outpatient clinics, the library, computer classes, the cafeteria and the premises for student activities on Beirut Campus. Moreover, the experts had the opportunity to see the Debbieh Campus of Beirut Arab University which comprises the Faculty of Architecture, the Faculty of Engineering and the Faculty of Science.

In the course of the on-site visit, the University submitted the following additional documents:

- Beirut Arab University Research Report 2015-2016,
- Access to all documents concerning quality assurance at the Faculty of Health Sciences, such as entrance exams, internship reports, meeting minutes, etc.

The expert report is structured in compliance with the Accreditation Criteria of AHPGS, which were approved by the Accreditation Commission of AHPGS on September 30, 2015. The study program will be described and analyzed in a comprehensive manner below. The documents submitted by the University, the experts’ feedback to the documents, the observations made during the on-site visit, the results of discussions with the representatives of the University, Faculty of Health Sciences and the Department of Medical Laboratory Technology, and the students serve as the basis for the statements made in the expert report.

### **3.3.1 Program aims and their implementation**

The students of the bachelor study program “Medical Laboratory Technology” become equipped with knowledge, skills and necessary techniques needed to be a successful technologist in all areas of laboratory practice. The defined students’ learning outcomes by the Department describe the accumulated knowledge, intellectual and practical skills, and attitudes that students develop during the course of the study. These range from knowledge about the fun-

damentals of basic medical sciences, social and behavioral sciences, including chemistry, organic chemistry, biology, microbiology, biochemistry, anatomy and physiology, epidemiology and biostatistics as well as psychology and sociology policies and procedures for maintaining laboratory safety and labeling biohazardous substances through skills for interpreting the results of the different laboratory tests performed as well as recently published research and its implications for professional practice, up to collecting, preparing and analyzing specimens for laboratory evaluation and applying all labs the standard precautions for infection prevention and control.

In order to provide the students with broader knowledge in general, but also skills and attitudes that are considered essential to facilitate effective interprofessional collaborative practice, the Faculty applies interprofessional education of its health related study programs which was explained to the experts in a more detailed way on site. Additionally, the University requires a set of non-program specific mandatory and elective courses on University level for all students, among them Arabic and English language skills, a human rights introduction and communication skills.

From the experts' point of view, the study program pursues specific and clearly defined professional qualification objectives and intended learning outcomes that cover professional and interdisciplinary aspects and refer to the domain of academic competences.

On site, the University showed its strong commitment to personal development and social responsibility of the students and to enhance independent thinking and a comprehensive awareness to enable the students to make informed and socially responsible choices in agreement with their academic, professional and life goals. The University comprehensive Human Rights Center is a University initiative that assists students and accordingly their communities to a better understanding of their rights through raising awareness in the course of formal and non-formal methods thus complementing their education through all university years and years after.

From the experts' point of view, the requirements of this criterion are fulfilled.

### **3.3.2 Structure of the study program**

The Medical Laboratory Technology program consists of didactic and clinical components that begin with the basic sciences and foundational medical la-

laboratory courses mainly during the first and second year, followed by the pre-clinical professional and clinical professional courses mainly during the second and third year. After the introduction to basic sciences such as biology and microbiology, chemistry and biochemistry, anatomy and physiology, and epidemiology and biostatistics, which are taught commonly for students of the Health Sciences and Medicine study programs, the study program covers more specific clinical knowledge in the areas of hematology, bacteriology, toxicology, virology, mycology, parasitology, immunology, blood banking, histopathology and genetics on the one hand. On the other hand the students are provided with foundational knowledge about medical laboratory techniques, such as diagnostic laboratory procedures and laboratory body fluid analysis, through evidence-based laboratory research up to quality control and laboratory management.

The provided course handbook reveals a coherent structure and continuously increasing complexity of learning material and students' competence level, with the focus on specialization courses in the final stages of the education. The experts found that the number of course modules is appropriate for the achievement of the study program's objectives. They are structured in such a way to build upon prior knowledge and skills and are meticulously planned by topic on a weekly basis. Moreover, the teaching staff on site explained how they incorporate current issues and developments to their teaching.

However, the experts determined that in the course of the basic sciences, general chemistry and organic chemistry are taught parallel during the first semester. As, from the experts' point of view, a couple of problems in organic chemistry can only be understood based on basic principles, such as atoms, molecules, periodic system of the elements, chemical reactions etc., they recommend teaching general and inorganic chemistry first, e.g. with the double amount of hours during the first half of the first semester. Following, in the second half of the semester, basic principles and reactions in organic chemistry should be presented and discussed with the double amount of hours per week.

Supplementing the program-specific subjects, University mandatory courses (5 credits), that focus on Arabic culture and Arabic language, Human Rights as well as English and communication skills, are obligatory for all students enrolled at the University.

The Faculty of Health Sciences follows and implements a strong interdisciplinary and interprofessional approach which is firmly incorporated to the curriculum through the course "Interprofessional Education for Healthcare". The Faculty's explanations on site showed the staff's efforts on the one hand and the successful implementation on the other hand of the interprofessional approach in health care, reaching even into the University's outpatient clinic by now.

Thus, the experts conclude that the study program aims at providing students with specialized and interdisciplinary knowledge as well as professional, methodological and general competences.

As a whole, the study program comprises 39 courses. Students are allowed to register, per semester, a number of credit hours that vary between a maximum of 18 and a minimum of 12 credit hours. All courses are completed within one semester. The regular study period is three years/six semesters and two summer semesters. Summer semesters serve primarily to study University and Major Elective courses in order to gain general competences and to complete an individual professional profile by supplementing the compulsory curriculum.

On site, the University explained their credit hour system and its comparability again and showed the equivalence of the study program's 100 credits with a European Bachelor program; workload calculations are comparable as every credit requires two hours of independent study. From the experts' point of view, the program curriculum and its qualification objectives comply with the requirements of the higher education level.

The Department of Medical Laboratory Technology has signed cooperation agreements with seven Lebanese hospitals and private laboratories. In the course of the studies, every student completes 600 practical hours in simulated laboratory environments in the University, followed by 360 hours of real clinical and laboratory settings. These internships are incorporated into the curriculum and awarded with credit hours. The *Clinical Rotation Manual* ensures that every student experiences clinical rotations in the fields of phlebotomy, hematology, bacteriology, parasitology, immunology/serology, blood banking, clinical chemistry and histopathology and that every student is evaluated after the rotation. On site, the experts had the opportunity to confirm a

successful and well conceptualized arrangement of internships, also through talks with representatives of the cooperating hospitals and laboratories.

Furthermore, it was found that the University is attempting to transition away from traditionally didactic, teacher-centered methods to more active ones which encourage students to engage in the learning process and actively shape their courses of studies. As such, it was determined that the University encourages its students to take an active role in the creation of the educational process.

From the experts' point of view, the requirements of this criterion are fulfilled.

### **3.3.3 Admission and Feasibility**

Admission policies and procedures along with the requirements are listed in the University's *Rules and Regulations for the Undergraduate Programs*. In order to be admitted to the Bachelor study program "Medical Laboratory Technology," students must complete the admission process for BAU, which entails holding the official Lebanese Secondary School Certificate or its official equivalent and passing an entrance exam as well as an English exam. Students who fail to meet the English requirement must sign up for an intensive English course at BAU. The Faculty of Health Sciences defined, due to the nature of the practice, environment and responsibilities of Medical Laboratory Technologists, to make students perform certain medical tests, ensuring that all immunizations are completed. The experts find these requirements fitting and proportional to the study program; therefore, it was determined that the admission and student selection procedures correspond to the standards and learning objectives of the study program.

As every university in Lebanon, Beirut Arab University demands tuition fees. The University's aim is to provide a quality educational system with affordable tuition fees according to the students' economic situation. On site, the students confirm a very competitive price policy at BAU and the University's efforts to provide financial aid and scholarships. Among others, students that have siblings enrolled at the University during the same semester are eligible for a discount on their overall tuition fees. Children of University staff are exempted from tuition fees. Additionally, BAU provides direct financial support under defined conditions to students experiencing hardship in the form of tuition fees reductions. Furthermore, very skilled and talented students have

the chance to apply for BAU's scholarships and awards. The students on site also indicate that assisting jobs at University institutions, such as the library, are distributed among students experiencing economic shortage. From the experts' perspective it can be confirmed that the tuition fees are well considered. The opportunities for economic release are remarkable.

The experts determine a relatively high amount of exams to be passed during the "Medical Laboratory Technology" study program as there are two continuous written assessments in every course plus a final examination at the end of the course/semester (see also Criterion 4). Thus, the University observes the students' performance by collecting and generating the Course Grade Point Average (GPA), the Semester Grade Point Average (SGPA) and the Cumulative Point Average (CGPA). BAU uses the Point Averages to guarantee feasibility. Students with a SGPA and a CGPA less than 2.00 receive an academic warning and are prevented from registering for more than 12 credit hours in the following semester. Additionally, BAU launched an *Assessment Booklet* in order to provide teaching staff with practical guidelines to implement a competence oriented testing strategy, employing the full spectrum of test types. Asking the students on site about their workload, they consider the workload and the amount and the examination cycle appropriate. The type as well as the time of the different examinations is defined and communicated to the students transparently and at the beginning of the course.

The experts confirm that the feasibility of the study program is guaranteed and the amount of student workload is appropriate. As a whole, the organization of the education process ensures the successful implementation of the study program.

Beirut Arab University aspires to be among the higher education institutions that stand out in the domain of academic advising. Thus, BAU launched a concept about academic advising in order to guide students as to how to handle course selection, social issues and psychological problems. All information relevant to the "Medical Laboratory Technology" study program is published on the University's website, and students are able to access their internal records and study details through the i-connect system. Furthermore, advisors and counselors are available to students who find themselves in need of academic or administrative assistance. Every faculty member holds the position of academic advisor to a specific group of students. The students on site confirm a very well working consultation and advising system. The teach-

ing staff is easily approachable and students are provided with academic support and guidance required for the accomplishment of the program-related assignments. Students are also provided with social support required for the organization of the learning process.

The University has a non-discrimination policy for disabled students, and accepts and supports them on a case-by-case basis. The council of each department is responsible for making such decisions. Therefore, it was determined that students with disabilities and/or chronic illnesses receive compensation with regard to the requirements of the study process.

From the experts' point of view, the requirements of this criterion are fulfilled.

#### **3.3.4 Examination system and transparency**

The University uses a continuous assessment process to ensure the quality of education for its students and graduates. This is achieved by evaluating the performance of the student through a series of exams and tests that are scheduled during the academic semester in the faculties. The continuous assessment is carried out in the 7th and 12th week of the semester; the final course exam is taken in the 16th week at the end of the course/semester. The minimum passing grade for faculty and university requirement courses is "D". Such courses will be included in the CGPA. In case of having a grade "D-", the student must repeat the course. In case of a failed mandatory course, the student can repeat it until he/she passes. Failed elective courses can be repeated or replaced by another elective. Students may repeat any course(s) they passed only once to improve their CGPA. The evaluation and grading system is determined in BAU's *Rules and Regulations*.

In the experts' opinion the study program requires a very high amount of exams which causes a high workload not only for students but also for the teaching staff (see also Criterion 3). Discussing the issue on site, apparently students and staff are satisfied with the exam procedures and see clear benefits in the current practice. The transparency at the beginning of each semester makes the great number of assessments during and at the end of each semester manageable. The examinations are coordinated with the "Medical Laboratory Technology" program specific learning outcomes, and consist of multiple assessment methods including written exams, quizzes, practical ex-



ams, reports, seminars, presentations, discussions, and the evaluation of other submitted materials such as logbooks and portfolios.

Students of the “Medical Laboratory Technology” study program are not explicitly required to elaborate a bachelor thesis. On site, the program representatives show that the study program comprises an obligatory research project to be conducted and presented by every student in the last year of their studies, incorporated in the “Clinical Rotation” courses in order to be related to the student’s practical experiences. As a consequence, the experts confirm that the study program requires the students to apply research methodology and to train academic writing and, thus, prepares the students for further studies on Master level.

Thus, the experts conclude that the examinations, although numerous, keep the students focused on their studies and serve to determine whether the envisaged qualification objectives have been achieved or not.

The University accepts transferring credits from external higher education institutions (HEIs), provided that four conditions are met: (1) the transferred courses are similar in content and credits to those to be replaced; (2) the transferred courses were passed with a C or better; (3) the courses were completed less than five years ago; and the total number of transferred credit hours does not exceed 50% of the total credit hours required to graduate. These requirements are enumerated by the University’s “Student Manual.” The experts appreciate that the University has a system of assessment, conversion and recognition of students’ competences, credits and periods of study acquired and completed at other HEIs and encourage the University to also develop a concrete system for the acceptance, conversion and recognition of achievements earned in non-academic contexts (e.g. professional and technical experience), as the University already realizes for nurses who hold the Technique Superior to facilitate the upgrade to a Bachelor Degree in Nursing.

As stated above, the University’s non-discrimination policy protects those with disabilities or chronic illnesses from suffering discrimination and provides them a framework within which to submit actionable claims or to receive support from the University. However, due to the healthcare nature of the study program and out of concern for the health of the students and patients therein, the experts understand that students with illnesses which jeopardize

the physical or mental health of others must be excluded from the program, notwithstanding the non-discrimination policy.

The University maintains a website and an internal database through which information about available study programs, admission requirements, examination regulations, measures taken for students with disabilities, current events and activities at the University, student grades, course selection, and other academic and administrative matters can easily be obtained in a clear and readily accessible way.

From the experts' point of view, the requirements of this criterion are fulfilled.

### **3.3.5 Teaching staff and material equipment**

Responsible for the professional teaching in the Bachelor study program "Medical Laboratory Technology" are three full-time core academic faculty members, all holding a PhD in relevant fields. The core academic faculty carries an expected teaching load of 15-24 contact hours per week. Part-time teaching hours are based on the individual agreements with the University. Teaching hours are also reduced for staff with administrative tasks, such as for the dean. To cover the teaching load and the variety of taught disciplines, eight members of the Faculty of Health Sciences and other faculties are associated to the Department of Medical Laboratory Technology to contribute to the teaching of the program. In addition, the Department employs six laboratory instructors.

The experts find the amount of human resources allocated to the program to be sufficient to carry out its functions. The lecturers, laboratory instructors and professors within the Bachelor program "Medical Laboratory Technology" are in possession of academic and technical credentials and experience adequate to their jobs. The University has set requirements for the different positions in its *Policies and Bylaws* and its guideline for hiring new faculty. The University informs its employees about opportunities for personal and professional development in clear ways, and actively encourages their participation in workshops, training courses, and conferences intended to further their ability which is confirmed during the talks with the staff on site. Additionally, the University's mission emphasizes fairness and equality in recruitment of employees at all levels; this accountability ensures a degree of transparency that fulfills the experts' requisite criterion.

On site, the experts were shown around the University's and the Faculty's premises. The experts were impressed with the quality and vastness of the laboratories and clinical areas used to train students in the Bachelor program "Medical Laboratory Technology." Both through the University's submission of floor plans of its laboratories, simulation rooms and other technical infrastructure and the experts' tour of the University's facilities during the on-site visit, it was ascertained by the experts that the Bachelor study program "Medical Laboratory Technology" has ample available teaching facilities at its disposal. The laboratory infrastructure and the equipment are suitable to guarantee a high level of teaching and research. Moreover, during the on-site visit and the inspection of the laboratories, it was found that safety and security measures, such as safety instructions, fire extinguishers, puncture-safe disposal boxes, proper storage of chemicals and other material etc., is in place. This high standard could be enhanced by marking all harmful substances with the right identification signs, disposing regularly all chemicals out of use, cleaning all bottles and containers at least once a year to avoid contamination, installing luminescent escape symbols to guarantee orientation in case of electricity failures and validating all fire extinguishers regarding appropriate size and adequacy of powder extinguishers in all laboratories (that might damage some equipment irreversibly).

From the experts' point of view the new outpatient clinic that BAU is implementing has to be highlighted. It is not only meant to provide low-cost community health services but also to practice the interprofessional approach towards health care.

The University hosts several libraries at its various campuses; relevant for the Bachelor study program "Medical Laboratory Technology" is the Medical Sciences library on Beirut campus which was visited by the experts on site and is shared by students of all medical sector faculties, including pharmacy, medicine and dentistry. It contains ca. 4,700 printed books, 10,000 e-books, 110 theses, 200 visual media and access to e-journals and full-text databases such as Science Direct, Scopus, Access Medicine, CINAHL Plus, MEDLINE Complete, etc. The University's policy for acquiring new library materials takes into consideration the ongoing advancements on the level of academic curricula while keeping in mind research needs. There is a faculty-level Library Committee which ascertains which materials are in students' need, and purchases and

receives same. From the experts' point of view, also the yearly budget for purchasing new items is more than adequate.

Thus, the experts conclude that the University has adequate funding to ensure that the accessibility of material equipment, space and learning resources for all participants of the study program, including all practical elements contained therein, is guaranteed.

From the experts' point of view, the requirements of this criterion are fulfilled.

### **3.3.6 Quality assurance**

From the experts' point of view, Beirut Arab University has a well-structured system of quality assurance spread across all of its units. The University's Quality Assurance Center (UQAC) has been established at the University and is supervised by the University President. At each faculty of the University, a Quality Assurance Unit has been established (FQAU) and is supervised by the faculty dean. Students are involved in each faculty's Quality Assurance Unit. Quality assurance rooms are prepared in each faculty, in which all relevant documents are kept readily accessible for the responsible staff members. The Quality Assurance Units are in charge of monitoring the development of the faculties, their programs and regulations. Twice annually, the BAU Quality Assurance Committee visits each faculty.

On site, the experts had the opportunity to visit the Quality Assurance Unit's room and accessed all documents, such as meeting minutes, questionnaires, internship reports and evaluations, admission procedure and entrance exam documents etc.

The University carries out internal and external quality assurance procedures on a cyclical basis, among them course evaluations, student satisfaction surveys and exit surveys. At the end of each semester, a course report is written containing statistical information about student attendance, assessment and examination results, topics taught, didactic methods, suggestions for course enhancement and an action plan for the next semester. The students on site report that, apart from the anonymous written evaluations, the teaching staff is easily approachable in case of any support needed or claims to be made. The results of the internal quality assurance management system are applied for the continuous development of the study program. In doing so, the University takes into consideration the quality evaluation results as well as the anal-

yses of students' workload, their academic accomplishments and feedback from graduates. The quality assurance processes at the University involve all tiers of involved individuals, including students, instructors, administrators, alumni and trustees. The curriculum of the Bachelor study program "Medical Laboratory Technology" has been enhanced and developed based on international benchmarks and standards. All members of the Department of Medical Laboratory Technology must be involved in curriculum planning, monthly departmental meetings and addressing issues on multiple levels within the department. The FQAU and UQAC engage in continuous internal auditing to both assess academic performance/growth and to ensure compatibility with University regulations and objectives. Additionally, the Institutional Review Board and the Deanship for Graduate Studies uphold BAU's quality assurance policies in research capacities.

The experts conclude that the University has a documented and published concept of quality assurance, education process, teaching and research, and that the University collects, analyzes and applies information related to the management of internal quality assurance.

From the experts' point of view, the requirements of this criterion are fulfilled.

### **3.3.7 Gender equality and equal opportunities**

BAU has committed itself to its strategy of providing an embracing environment for academic creativity and development, installing explicitly the concept of social responsibility, while respecting diversity and multicultural understanding. According to that mission, the University presents itself on site as a very tolerant and open minded institution that strives to provide students with a broad education that includes social responsibility a better understanding of their rights (see Criterion 1). The University aims at providing higher education to all applicants, regardless of sex, nationality, religion, or social/familial background. To put that into practice, BAU is known for offering study programs for a well-considered and reasonable price (see Criterion 3). Furthermore, the University provides scholarships for talented students, as well as need-based student assistant jobs and tuition fee reductions for siblings.

On site, the experts had the opportunity to speak to male and female students of different nationalities and different religious backgrounds. The students report to have chosen BAU not only for the competitive tuition fees but also

because they knew they would be supported and tolerated by teachers and students alike, regardless of their individual backgrounds. Both staff and students highlighted the absence of discrimination in any regard as a remarkable feature of BAU. This indicates how strongly issues of “equal opportunities” are anchored in the institution’s vision and mission.

Regarding students with disabilities, the University has ensured easy access for wheelchairs; ramps and passages are available. As BAU explicitly welcomes all students, regardless of potential disabilities or chronic illnesses, the University and the respective instructors strive to provide individual solutions in examinations according to the student’s disablement.

The experts conclude that the University has taken actions on the provision of gender equality and promotion of equal opportunities for students with particular living circumstances.

From the experts’ point of view, the requirements of this criterion are fulfilled.

### **3.4 Summary**

The overall impression of the University is very positive. Beirut Arab University presents itself convincingly as an open-minded and dynamic institution with willingness to import new ideas and recommendations for further enhancement. A number of additional favorable characteristics and achievements of the study program were demonstrated by the management of the University, the representatives of the faculty, those of the department, and of the student body. These are interdisciplinary education, well-balanced correlation between theory and practice, an excellent infrastructure and a strong commitment to personal development and social responsibility. As a whole, the study program prepares qualified medical laboratory technologists who meet the needs of the labor market in terms of responsibility, safety-consciousness and technical knowledge.

Based on the information from written documents and the results of the on-site visit, the experts came to the conclusion that the study program “Medical Laboratory Technology” offered at the Beirut Arab University fulfills the above assessed criteria. Hence, the experts decided to submit a recommendation to the Accreditation Commission of the AHPGS for a positive decision regarding the accreditation of the study program.

For the continuous development of the study program, the experts have outlined the following recommendations:

- General and inorganic chemistry should be taught first, and, based on that, be followed by classes in organic chemistry.
- A system for the acceptance, conversion and recognition of achievements earned in non-academic contexts (e.g. professional and technical experience) should be developed.
- All harmful substances should be marked with the right identification signs, all chemicals out of use should regularly be disposed, all bottles and containers should be cleaned at least once a year to avoid contamination, luminescent escape symbols should be installed, all fire extinguishers should be validated regarding appropriate size and adequacy of powder extinguishers in all laboratories.

## **4 Decision of the accreditation commission**

### **The decision of the Accreditation Commission of 25 July 2017**

The resolution of the Accreditation Commission of the AHPGS is based on the University's application, as well as the expert review and the on-site visit covered in the expert report.

The on-site visit of the University took place on May 16-17, 2017, according to the previously agreed-upon schedule.

The accreditation decision is based on the Accreditation Criteria developed by the AHPGS. The Accreditation Criteria are developed by the AHPGS in close accordance with the existing criteria and requirements valid in the Federal Republic of Germany and based on the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG), established by the European Association for Quality Assurance in Higher Education (ENQA).

The Accreditation Commission of the AHPGS discussed the procedural documents and the vote of the expert group.

The study program requires the obtainment of 100 credit hours (CH) according to the University's credit hour system. The regulated study period in the program "Medical Laboratory Technology" is three years/six semesters and two summer terms. The study program comprises 39 mandatory courses, covering mandatory and elective University courses, basic science courses, mandatory and elective major courses as well as pre-clinical and clinical professional courses. The bachelor study program "Medical Laboratory Technology" is completed with the awarding of the academic degree "Bachelor of Science."

The Accreditation Commission of the AHPGS considers that all Accreditation Criteria are fulfilled and adopts the following decision:

The bachelor study program "Medical Laboratory Technology" is accredited for the duration of five years, until September 30, 2022.

For further development and enhancement of the study program, as well as of the University as a whole, the Accreditation Commission of the AHPGS supports the recommendations articulated in the expert report.