

Akkreditierungsagentur  
im Bereich Gesundheit und Soziales  
Accreditation Agency in Health and Social Sciences



## **Assessment Report**

**for the Application of the  
Eastern Mediterranean University, Northern Cyprus,  
Faculty of Arts and Sciences,  
Department of Biological Sciences,  
for the accreditation of Bachelor Study Program  
“Molecular Biology and Genetics” (Bachelor of Science, B.S.)**

AHPGS Akkreditierung gGmbH  
Sedanstr. 22  
79098 Freiburg  
Telefon: 0761/208533-0  
E-Mail: [ahpgs@ahpgs.de](mailto:ahpgs@ahpgs.de)

|               |  |
|---------------|--|
| On-site visit | 09.01.2015   |
| Expert group  | Prof. Dr. Hans-Jörg Jacobsen<br>Dr. Rolf Heusser<br>Kai Thorben Selm |
| Decision      | 07.05.2015   |

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## 1 Introduction

The Accreditation Agency in Health and Social Sciences (AHPGS) is an interdisciplinary, multi-professional organization. Its mission is to carry out quality assurance procedures regarding study programs as well as Higher Education Institutions in the fields of health and social sciences, as well as in related domains. By implementing quality assurance procedures, the AHPGS contributes to the improvement of the overall quality of teaching and learning.

Since 2004 the AHPGS has been a member of the European Consortium for Accreditation (ECA). In 2006, the AHPGS also joined the European Association for Quality Assurance in Higher Education (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 is 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>1</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

The accreditation procedure is carried out in three steps:

### 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. The documents submitted by the University are provided to describe the study program to

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<sup>1</sup> Approved by the AHPGS Accreditation Commission

be accredited as uniquely as possible. Based on the documents submitted by the University, the AHPGS produces a summary (see Sections 2-5), which is to be approved by the University and subsequently made available to the expert group, together with all other documents.

## **II. On-site visit (Peer-review)**

Alongside with preparing the documents, the AHPGS Accreditation Commission nominates highly experienced experts with professional experience in accreditation procedures as well as expertise in the specific academic area of the study program to be accredited.

The experts carry out an external on-site visit to the University. In the course of the visit, discussions with members of the University take place, starting with the University and department management to the degree program management, teachers and students. The experts' task during the on-site visit is verification and evaluation of the objectives of the program and its projected study results, structure, staff, material resources, course of studies and methods of assessment (selection of students, assessment of achievements, students' support, etc.), as well as of the program management (program administration and external assurance of study quality).

Following the on-site visit, an Expert Report is issued by the expert group. The report is based on the results of the visit and the documents submitted by the University. The Expert Report is made available to the University, in order for it to issue a response opinion. The Expert Report as well as the University's response opinion – together with the submitted documents – are submitted to the AHPGS Accreditation Commission.

## **III. Accreditation decision**

The AHPGS Accreditation Commission examines the documentation provided, namely the University's self-evaluation report, its annexes, the summary comprised by the AHPGS, the Expert Report as well as the University's response opinion. These documents lay basis for the Commission's decision regarding the accreditation of the study program.

## 2 Overview

### 2.1 Procedure-related documents

On 4 June 2014, the Eastern Mediterranean University submitted the self-evaluation report and the accompanying documents related to the accreditation procedure to the AHPGS. The Agency verified the sufficiency and content relevance of these documents and then commenced writing summary of the study program based on these documents. During this period, the AHPGS came up with several open questions (OQ), which were then forwarded to the University on 24 August 2014.

Parallel to the above described procedure, the Accreditation Commission of the AHPGS nominated the expert group for written evaluation and the on-site visit of the University. Within the period of December 2014, the relevant documents of the study program were made available to the group of experts for written review with regard to the specified criteria as well as the disciplinary and substantive aspects. The results of the written review were taken as an orientation for the on-site visit of the University.

On 24 October 2014, the University submitted answers to open questions (AOQ), which the AHPGS then complemented to the summary of the study program. The self-evaluation report, its accompanying documents, and the summary of the study program were forwarded to the members of the expert group assigned for the on-site visit.

The given document presents the summary of the AHPGS for the Bachelor study program "Molecular Biology and Genetics".

The Self-Evaluation Report submitted by the University follows the outline recommended by the AHPGS. Along with the Self-Evaluation Report, the following additional documents have been provided (the documents submitted by the University are numbered in the following order for easier referencing):

| <b>Annex</b> | <b>Description</b>   |
|--------------|--|
| 1            | Student survey   |
| 2            | ECTS calculation for Human Genetics (BIOL 213) module                        |
| 3            | The curriculum of MBG program with specification of the ECTS and EMU credits |

|    |  |
|----|--|
| 4  | Program specific modules   |
| 5  | Modules from other disciplines   |
| 6  | Grading system   |
| 7  | Poster of the 1st Molecular Biology and Genetics Career Day  |
| 8  | Some of the most well-known hospitals in T.R.N.C.  |
| 9  | Number of female and male students from different nations  |
| 10 | 'Engelsiz Kampüs Projesi'- EMU's campus project addressing the needs of individuals with disabilities. |
| 11 | The weekly calculated lecture-laboratory-tutorial hours for each academic year                         |
| 12 | Modules given by full-time instructors for the last four semesters                                     |
| 13 | Modules given by part-time instructors for the last four semesters                                     |
| 14 | Human resources in the study program   |
| 15 | EMU Faculty of Arts and Sciences classroom, laboratory and research laboratories                       |
| 16 | EMU Faculty of Arts and Sciences classroom, amphitheater laboratory and research laboratories          |
| 17 | EMU computer center students laboratory  |
| 18 | EMU's list of databases  |
| 19 | Module descriptions  |
| 20 | Teaching staff CVs   |
| 21 | Regulations for academic assessment and quality improvement at Eastern Mediterranean University        |
| 22 | EMU entrance exams and student admission by-law  |
| 23 | By law for examinations and assessment   |

Table 1. Specific Documents for Study Program

The Self-Evaluation Report, the open questions (OQ) and the answers to the open questions (AOQ) as well as the additional documents provide the basis for the present summary. The layout bears no significance, as it solely reflects the agreed standard within the University.

## 2.2 Study program

### 2.2.1 Structural data

|            |  |
|------------|--|
| University | The Eastern Mediterranean University (EMU), North Cyprus |
|------------|--|

|   |  |
|---|--|
| Faculty/Department                        | Faculty of Arts and Sciences, Department of Biological Sciences  |
| Title of the study program                | "Molecular Biology and Genetics"   |
| Degree awarded                            | Bachelor of Science (B.S.)   |
| Language of instruction                   | English  |
| Form of studies                           | Full-time  |
| Organizational structure                  | Monday – Friday from 8:30 to 16:30   |
| Period of education                       | 8 semesters  |
| Credit Points (CP) for the whole program  | 240 credits, according to ECTS system<br>138 credits, according to the University's internal system of calculation (EMU)   |
| Hours/CP                                  | ECTS system: 1 ECTS = 30 hours of weekly workload<br>EMU system: 1 EMU Credit = 1 lecture hour<br>0.5 EMU Credit = 1 laboratory hour   |
| Workload                                  | Total: 7,200 hours<br>Contact hours: 2.860 hours<br>Individual work: 2.000 hours   |
| CP for the final paper                    | Not applicable   |
| Beginning of the study program            | Fall semester 2011/2012  |
| Time of admission                         | Prior to each Fall and each Spring semester  |
| Number of available places on the program | There is no set number of places for admission yet; on average, 30-40 places per academic admission term   |
| Number of enrolled students by now        | 201  |
| Number of graduates by now                | Not applicable   |
| Particular enrollment conditions          | High school certificate or its equivalent and a standardized test for admission to Turkish institutions of higher education (LYS or ÖSYS exam).<br>For citizens of the Turkish Republic of Northern Cyprus: EMU Entrance Examination |
| Tuition fees                              | \$ 7.220 (cf. Self-Evaluation Report, Paragraph 1.1.10)  |

Table 2. Structural Data of Study Program



The general objective of the “Molecular Biology and Genetics” Bachelor program is to give its students a well-rounded education in molecular biology and genetics (see Self-Evaluation Report, 1.3.1). The program is designed for 8 semesters; it comprises compulsory general and program-specific courses as well as electives. The curriculum of the study program does not make it compulsory for students but encourages them to complete internships. The first batch of students is now in their fourth year (as of 21/10/2014) and is expected to have graduated by July 2015.

### **2.2.2 Qualification objectives and employment opportunities**

According to the University, the “Molecular Biology and Genetics” undergraduate program aims to educate students with thorough theoretical and practical knowledge and skills in a wide field of knowledge (biology, biochemistry, molecular biology, genetics, microbiology, physiology as well as interdisciplinary areas including neurogenetics, genomics, bioinformatics and computational biology). The program learning objectives are as follows:

1. Exploring and evaluating technological and scientific developments of biological sciences and related disciplines;
2. Providing its students with critical thinking;
3. Ensuring a strong foundation for students to develop their laboratory skills and use of recent technologies;
4. Analyzing research topics in biological sciences (see Self-Evaluation Report, 1.3.1).

Regarding qualification objectives for the graduates, the program strives to provide its students with hands-on laboratory experience and teach them up-to-date techniques including the polymerase chain reaction, gel electrophoresis, DNA extraction, etc. Moreover, students also acquire key skills in reading and understanding scientific literature in their sphere of knowledge, critical thinking (by developing imagination, creativity, logic and reasoning), data analysis as well as problem-solving (by practicing data collection, conceptual thinking and scientific experimentation and by critically reading, analyzing and discussing scientific literature). The study program provides an opportunity for personality development and improvement of team work, time management and communication skills. Students of the “Molecular Biology and Genetics” Bachelor program have established the “Genetics Club” that aims to raise awareness among students

and teach them social responsibility (see Self-Evaluation Report, 1.3.2-1.3.3). The club is not governed by the Department. In addition, any other students of the University could join the club.

As stated in Self-Evaluation Report, Paragraph 1.3.2, during their studies at the University, students of the program are encouraged to participate in the administrative work of their department and can be employed as student assistants to be responsible for assisting the teaching staff and other students, preparing laboratory sessions and carrying out office work. After the successful completion of the four-year undergraduate curriculum, the graduates receive a Bachelor of Science (B.S.) degree in Molecular Biology and Genetics. Upon receiving this degree, graduates can continue their education at relevant postgraduate programs in national and international academic settings. The University states that the graduates have also job opportunities in a variety of fields including clinical genetics, bioinformatics, biotechnology industry as well as agricultural or environmental sectors (see Self-Evaluation Report, 1.4.1). Besides this, the graduates can pursue a career in teaching Biology as the Department of Education at EMU offers extra pedagogical training programs (see Self-Evaluation Report, 1.4.2). Students, who wish to pursue this option, can apply to these programs upon finishing the first year (second semester) of their specialization program (see AOO, Attachment 1).

In accordance with the information provided by the University, health sciences and services are currently at rise in North Cyprus and in the Republic of Turkey, which means favorable labor market situation for the graduates of the "Molecular Biology and Genetics" study program. The graduates will be eligible to work in private or state hospitals and will also have the opportunity to work in private diagnostic laboratories, research institutes, and pharmaceutical companies (for the list of most well-known hospitals, refer to Annex 8). Besides this, there is constant need for teachers specializing in biology, as biology is one of the core science subjects taught at university and high-school levels in North Cyprus (see Self-Evaluation Report, 1.4.2).

Since the first batch of students of the "Molecular Biology and Genetics" Bachelor of Science program is expected to graduate at the end of the academic year 2014/2015 (in July 2015), there is no statistics on the graduates' employment. However, as stated in Paragraph 1.2.6 of the Self-Evaluation Report, the Department of Biological Sciences is committed to assist their students and gradu-

ates in work placement. In this regards, on 9 May 2014 the Department held its first Molecular Biology and Genetics Career Day (see Attachment 7), where students of the program learnt about career options. At the event, different areas of expertise were presented: forensic genetics, genetic counseling, high-school teaching, molecular diagnosis, medical sales, academic research and teaching, and laboratory management. Moreover, the University provides a service called Alumni Communication and Career Development MIKA<sup>2</sup> designed to aid students with employment by organizing workshops on CV and cover letter writing, presentation and interview techniques, etc.

### 2.2.3 Structure of the study program and exam system

The “Molecular Biology and Genetics” Bachelor program comprises 40 courses, out of which 34 are obligatory courses and 6 are optional ones. There are 5 courses planned for each semester; thus, the curriculum shall be completed within 8 semesters (4 years). No period for exchange programs or studies abroad is envisaged for “Molecular Biology and Genetics” students. The University has exchange programs set up with other universities abroad for other programs.

Annex 3 presents the curriculum of the “Molecular Biology and Genetics” program with specification of the ECTS and EMU credit points and Annex 19 gives description of courses covering their title, semester, number of credit hours, language of instruction, description of the study content, educational objectives, and the methods for student’s assessment. In accordance with Annexes 4 and 5 all obligatory courses can be divided into program-specific disciplines (19) and courses offered in collaboration with other study programs (15).

The list of program-specific compulsory courses is as follows (see Annex 4):

| Sem. | Title  | ECTS CP | EMU CP |
|------|--|---------|--------|
| 1    | General Biology I                              | 6       | 4      |
| 2    | General Biology II                             | 6       | 4      |
|      | Introduction to Molecular Biology and Genetics | 6       | 3      |
| 3    | Molecular Cell Biology I                       | 6       | 4      |
|      | Human Genetics                                 | 6       | 3      |
| 4    | Molecular Cell Biology II                      | 7       | 4      |
|      | Physiology                                     | 6       | 4      |

<sup>2</sup> <http://mika.emu.edu.tr/>

|   |  |            |           |
|---|--|------------|-----------|
| 5 | Molecular Genetics                       | 8          | 4         |
|   | Concepts in Behavioral Genetics          | 8          | 4         |
| 6 | Bioinformatics and Computational Biology | 6          | 3         |
|   | Neurogenetics                            | 7          | 3         |
|   | Biochemistry                             | 6          | 4         |
| 7 | Molecular Evolution                      | 6          | 3         |
|   | Developmental Biology                    | 6          | 4         |
|   | Genomics and Proteomics                  | 6          | 3         |
|   | Microbiology                             | 6          | 4         |
| 8 | Immunology                               | 7          | 4         |
|   | Systems Biology                          | 7          | 3         |
|   | Bioethics of Genetics and Genomics       | 6          | 3         |
|   | <b>Total:</b>                            | <b>122</b> | <b>68</b> |

Table 3: Overview of Program-Specific Obligatory Courses

The structure of the program introduces students gradually to the sphere of knowledge. During their first year, at *General Biology I* and *General Biology II*, students cover general notions (cells, organisms, species, and systems), learn about various current concepts and theories in different sub-disciplines, as well as acquire basic laboratory skills. *Introduction to Molecular Biology and Genetics* is aimed at presenting cellular components, structure function and division of cells and giving a background of gene expression and regulation. The courses also introduce current biotechnological techniques and their application. In their first year, students obtain the following laboratory skills: slide preparation and visualization, pipetting, dissection and incubation, chromosome staining, etc.

The sophomore year modules such as *Molecular Cell Biology I* and *Molecular Cell Biology II* are built on the first-year modules and aim to further the detailed study of gene expression, cell components and function, cell cycle, and cellular interactions. Laboratory sessions teach more complex techniques such as polymerase chain reaction, gel electrophoresis and bacterial transformation. The *Human Genetics* course is based on *General Biology*, *Introduction to Molecular Biology and Genetics* as well as *Molecular Cell Biology I* and is designed to introduce medical and clinical importance of genetics in various disease conditions and explore genetic testing options and the relevant ethical issues.

During the third year of their studies, students explore gene and protein functions in a greater detail on molecular level. In *Molecular Genetics*, stem cell technology and further animal models of diseases (such as knockout-mouse models) are introduced with the help of case studies. Another junior year course, *Concepts in Behavioral Genetics*, is based on *Human Genetics* and *Molecular Genetics* and teaches the role of genetic and environmental interactions, epigenetics on gene expression regulation and its relevance in behavioral conditions. In the 6<sup>th</sup> semester, *Neurogenetics* describes nervous system, genetic diseases affecting it, and new techniques in molecular understanding of those diseases such as genome-wide association studies and exome sequencing. In *Bioinformatics and Computational Biology*, a program-specific obligatory course that follows the introductory *Introduction to Computer Science*, students are taught to use basic widely-used bioinformatics databases and tools for answering biomedical questions (see Self-Evaluation Report, 1.3.4).

The fourth year of the program envisages completion of 7 compulsory modules. In *Molecular Evolution*, students are taught how genes and genomes evolve (see the AQQ, No.7). In the class on *Developmental Biology*, students will examine vertebrate and invertebrate development and also examine the role of the evolutionarily conserved genes. The course in *Genomics and Proteomics* takes an omics perspective to biomedical sciences, introduces genomes, transcriptomes, proteomes, interactomes etc. of various species. Hands-on sessions include genomic data analysis. Discipline in *Microbiology* will be mostly focused on bacterial genetics, whereas in *Immunology* classes students will obtain knowledge on the functions of immune system. *Systems Biology* is designed to reveal properties of cells, tissues, and organisms functioning as a complete system. Finally, *Bioethics of Genetics and Genomics* will inform students on the ethical issues relevant to recent advances in genetics and genomics

Table 4 presents courses offered in collaboration with other study programs (see Annex 5):

| Sem. | Title                      | ECTS CP | EMU CP |
|------|----------------------------|---------|--------|
| 1    | General Chemistry I        | 6       | 4      |
|      | Calculus I                 | 6       | 4      |
|      | Communication in English I | 5       | 3      |
|      | Communication in Turkish   | 5       | 2      |

|   |                                     |           |           |
|---|-------------------------------------|-----------|-----------|
| 2 | General Chemistry II                | 6         | 4         |
|   | Calculus II                         | 6         | 4         |
|   | Communication in English II         | 5         | 4         |
| 3 | Physics I                           | 7         | 3         |
|   | Introduction to Computer Science I  | 6         | 3         |
|   | Organic Chemistry I                 | 6         | 4         |
| 4 | Physics II                          | 7         | 4         |
|   | Introduction to Computer Science II | 6         | 3         |
|   | Organic Chemistry II                | 6         | 4         |
| 5 | Database Management Systems         | 6         | 3         |
| 6 | Biostatistics                       | 6         | 3         |
|   | <b>Total:</b>                       | <b>89</b> | <b>52</b> |

Table 4: Overview of Obligatory Courses Offered in Cooperation with Other Study Programs

These courses can be divided into two groups: 1) general science courses (such as *General Chemistry*, *Calculus*, *Physics*, etc.) that provide background information for better understanding of the above stated program-specific courses; and 2) humanity courses (English and Turkish classes). Regarding the language courses, the University states that approximately 40 groups for *Communication in English I* and *Communication in English II* as well as 25 groups for *Communication in Turkish* are offered to all university students each semester. Students of the “Molecular Biology and Genetics” can join one of English groups to master the language together with students from other departments. *Communication in Turkish* is designed for foreign students who do not speak Turkish. Since *Communication in Turkish* is an obligatory course, students with a good command of the Turkish language are required to take *Atatürk and History of Turkish Reforms* instead (see Self-Evaluation Report, 1.2.2).

The curriculum also includes 3 Area Elective and 3 University Elective courses. They are offered in the following semesters (Area electives offered up to date include the following examples: BIOL 119 (Ecology and Environment), BIOL105 (Biological Bases of Behavior), BIOL 230 (Molecular Biotechnology -description is provided in AOOs). University Elective (UE) courses are provided by other departments and range from courses including economics, language courses to

psychology etc. In the upcoming semesters other newly designed elective courses could be offered.

| Sem. | Titles                  | ECTS CP   | EMU CP    |
|------|-------------------------|-----------|-----------|
| 5    | University elective I   | 5         | 3         |
|      | Area elective I         | 5         | 3         |
| 6    | University elective II  | 5         | 3         |
| 7    | Area elective II        | 5         | 3         |
| 8    | University elective III | 5         | 3         |
|      | Area elective III       | 5         | 3         |
|      | <b>Total:</b>           | <b>30</b> | <b>18</b> |

Table 5: Overview of elective courses

Area electives are specialized modules aimed at covering specific topics of the field in more detail. Among area elective classes, which will be offered at the Department in the future, the University names Plant Genomics, Public Health Genomics, Genetic Epidemiology, Selected topics in Computational Biology, Seminar in Psychiatric Genetics, Seminar in Cancer Genetics, etc. As for the University electives, they can be both specialized and general, such as General Psychology, Introduction to Economics, German Language, or classes on Italian Culture in the Modern Era (see AQQ, No.9). The University states that elective modules are taught only in English, except for Turkish Language class, and they do not have any prerequisites. Consequently, students can select any area elective module that matches with their schedule, i.e. does not clash with the compulsory modules.

No cooperation with other universities, companies or other institutions is provided for in the curriculum of the "Molecular Biology and Genetics" study program (see Self-Evaluation Report, 1.2.2). While no student exchange opportunities or studies abroad seem to be provided, the program is claimed to suit the purposes of internationality and follow the European and US higher education standards as well as meet the criteria of Turkish Higher Education Council (YÖK). To provide students with the global perspectives of their discipline, the curriculum has been developed in line with its international counterparts (for the list of exemplary universities, refer to Self-Evaluation Report, 1.2.8). Moreover, among the faculty members there are graduates of the Rockefeller University, New York, USA, University of Sheffield, United Kingdom as well as the Boğaziçi University, Istanbul.

bul and Hacettepe University, Ankara. Besides this, all courses, except for *Atatürk and History of Turkish Reforms, Communication in Turkish* are taught in English.

As stated in Paragraph 1.2.4 of the Self-Evaluation Report, the “Molecular Biology and Genetics” Bachelor program uses various forms of instruction including lectures, seminars, exercises, workshops, project work, study groups, presentations, field trips, wet and dry laboratory work. The program is taught with the use of electronic and media teaching aids: power-point presentations, videos and interactive hands-on computer sessions. The “Molecular Biology and Genetics” laboratory is equipped with a smart board. However, no distance learning is foreseen for the program (see Self-Evaluation Report, 1.2.5).

As for the exam system applied at the “Molecular Biology and Genetics” study program, each course has 1 midterm exam and 1 final exam. In addition, depending on the instructor, there could be additional quizzes or other forms of assessment including oral presentations. Besides, attendance to classes is required at all study programs of the Eastern Mediterranean University. The Department of Biological Sciences requires at least 70% attendance for each course throughout one academic semester (see Self-Evaluation Report, 1.1.6). All in all, students have to complete 40 midterms and 40 final exams within 8 semesters; therefore these numbers are 5 each per semester (5 mid-terms and 5 finals). Exams take place in accordance with the University’s requirements for exam rules and regulations<sup>3</sup>. Make-up exams for mid-terms are usually scheduled for the end of the semester, one week prior to final exams. For those students who miss a final exam or fail a module, re-sit exams are held at the end of each semester after the final exams<sup>4</sup> (see Self-Evaluation Report, 1.2.3).

The University’s grading system is presented in Annex 6 and is used by all instructors within the Department of Biological Sciences. Regarding the academic feasibility of the exams, Paragraph 1.2.3 of the Self-Evaluation Report states that all the exams are based on course objectives and the content covered throughout the course. If a student has any issues regarding fair evaluation of the exams, they can appeal to the Department administration for re-evaluation by an independent committee.

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<sup>3</sup> [http://mevzuat.emu.edu.tr/5-1-4-Rules-examinations\\_and\\_evaluations.htm](http://mevzuat.emu.edu.tr/5-1-4-Rules-examinations_and_evaluations.htm)

<sup>4</sup> An exam schedule of the academic year 2013/2014 is given at [http://registrar.emu.edu.tr/eng/Academic/academiccalendar13\\_14.htm](http://registrar.emu.edu.tr/eng/Academic/academiccalendar13_14.htm)



Although no graduation work is included in the curriculum of the study program, the University asserts that the teaching staff uses their research experience for lecture materials wherever applicable to motivate students to conduct scientific research. Paragraph 1.2.7 of the Self-Evaluation Report gives a list of current research interests, which partly overlap with the study courses. Regarding the practical relevance of the “Molecular Biology and Genetics” Bachelor program, the curriculum is designed to provide approximately 420 hours of hands-on practical experience (calculated for only biology-related laboratory practical sessions, note: this number includes tutorial sessions sometimes taking place instead of wet laboratory work). Students are also encouraged to undertake internships in order to get acquainted with different work settings prior to their graduation; however, there is no mandatory internship module in the curriculum. In the AOO, No.11, the University provides a list of a total of 5 exemplary independent internships completed by the program students.

Furthermore, there is no obligatory graduation/thesis research project envisaged in the curriculum. The University explains that the program module structure follows the Turkish Higher Education Council (YÖK) criteria, according to which graduate projects for Molecular Biology and Genetics program are not required. However, the department is planning to offer ongoing research opportunities available for undergraduate students (AOO, No.10).

Regarding the compensatory measures for students with disabilities or chronic illnesses, based on a student’s needs the “Molecular Biology and Genetics” program offers them extra time and space in all study courses, practical laboratory sessions, and exams. The entrance of the Faculty of Arts and Sciences entrance is accessible for wheelchairs (see Self-Evaluation report, 1.2.3). The University’s plans to make the premises more accessible and friendly for disabled students are presented in Annex 10.

#### **2.2.4 Admission requirements**

In accordance with the Entrance Exams and Student Admission By-Law<sup>5</sup> of the Eastern Mediterranean University, an applicant has to provide a high school certificate or its equivalent to be enrolled at the University. Further admission requirements differ for 3 types of applicants.

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<sup>5</sup> [http://mevzuat.emu.edu.tr/5-1-1-Rules-Entrance\\_exam.htm](http://mevzuat.emu.edu.tr/5-1-1-Rules-Entrance_exam.htm)

1. Citizens of the Republic of Turkey are admitted to a two- or four-year program with a right for pre-registration based on the grades obtained from the Student Selection Exam (ÖSS) or the Student Selection and Placement Exam (ÖSYS) by the Turkish Republic Higher Education Board (YÖK).
2. Citizens of the Turkish Republic of Northern Cyprus are admitted to a two- or four-year program with a right for pre-registration based on the scores obtained from the EMU entrance exam. The EMU entrance exam takes place in July annually; it consists of a total of 100 multiple choice questions on 4 main subjects, each comprising 25 questions: mathematics, science, Turkish language, and social sciences (see AOO, No.5). In order to be pre-registered within the set quota, an applicant should be successful at a minimum of 5 GCE O level<sup>6</sup> exams in relevant fields or any other equivalent exams according to the English educational system
3. Applicants from countries other than the Republic of Turkey or the Turkish Republic of Northern Cyprus are enrolled based on the set quota for third countries and their performance in high school. Moreover, citizens of the Republic of Turkey or the Turkish Republic of Northern Cyprus who have graduated from a high school in another country are recognized as applicants from third countries (see Self-Evaluation Report, 1.5.1).

There is no fixed number of places for admission, while approximately 40 students are enrolled at the program each term. Admission procedures take place in summer for the Fall Academic Term, and in winter before the Spring Academic Term (for more details on admission regulations, see Annex 22).

Regarding the transfer of credits, a student who has studied for a minimum of one semester at another university or any other equivalent institution of higher education (except for a Preparatory School) can apply to the Eastern Mediterranean University for transfer. In order to be enrolled and to continue their education, the person should fulfil the following requirements:

- Be proficient in the English language;
- Have no record of a permanent suspension or any other penalty at the previous university or any other higher education institution;

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<sup>6</sup> A subject-based O Level (Ordinary Level) as part of the General Certificate of Education (GCE) used in the United Kingdom and a number of post-colonial countries.

Applications of the candidates who meet the criteria specified above are evaluated and finalized by the Department or the University Council based on the set quota for each department. As explained by the University in the AOQ, No.6, the Department of Biological Sciences is in a development period and, by now, the only fixed quota of 30 people per semester applies for Turkish citizens. It is emphasized that when the Department reaches a certain number of students, additional quotas will be introduced for the citizens of the Turkish Republic of Northern Cyprus and international applicants. This will, however, depend on the sufficiency of the teaching staff and of other study relevant resources.

## **2.3 Study conditions and quality assurance**

### **2.3.1 Human resources**

The teaching and administrative staff of the “Molecular Biology and Genetics” Bachelor program comprises in total 22 teaching instructors, of these 12 are members of the Department of Biological Sciences (see AOQ, the document “Human resources in the study program”) and 10 are instructors from other departments (see AOQ, No.12). Among the Biological department instructors there, 1 assistant professors, 2 associate professors, 2 doctors (phd.), and 3 people with a degree of Master of Science. Among the instructors from other department, there are 3 professors, 3 associate professors, 1 assistant professor, 2 doctors, and 1 instructor with a degree of Master of Science.

Besides, the technical and administrative staff that helps coordinate the program consists of 10 employees: 1 faculty secretary, 1 department secretary, 1 administrative supervisor (building and infrastructure), 1 department IT administrator, 3 department assistants, 1 department laboratory manager, 1 Chemistry laboratory manager, and 1 Physics laboratory manager (see AOQ, the document “Human resources in the study program”).

Students of the program are expected to complete their studies in 4 years (8 semesters, roughly 16 weeks each). As per the academic year 2013/2014, there are currently 201 students enrolled at the program, which means the expected student-teacher ratio of approximately 6.5:1, i.e. about 6-7 students per 1 member of the teaching staff.

As reported in Paragraph 2.1.2 of the Self-Evaluation Report, the main criteria for selection of the teaching personnel are as follows: research background, number of publications, and graduation from a recognized international universi-

ty, experience gained at different universities and/or institutions and their proficiency in the language of instruction, both oral and written. The Senate of the Eastern Mediterranean University follows a standard procedure for employing new full-time instructors.

The University claims to offer opportunities for the academic improvement of the teaching staff. The University funds and hosts conferences and all faculty members are always welcome to partake and give reports. There is also a paid summer leave for research purposes that allows members of the teaching staff to continue education and focus on their research. What is more, the Continuing Education Centre offers further development courses that all members of the faculty are welcome to attend (see Self-Evaluation Report, 2.1.2).

### **2.3.2 Facilities**

Students of the “Molecular Biology and Genetics” Bachelor program benefit from the facilities of the faculty building as well as lecture halls, seminar rooms, and computer centers of the University. According to Annexes 15 and 16, at the Faculty of Arts and Sciences, there are 6 classrooms with capacity of 15-60 people, 15 classrooms with capacity of 70 people, 18 research laboratories of different types, and 2 amphitheater laboratories. Most of the classrooms, laboratories and student workstations have data projectors and smart boards (see Self-Evaluation Report, 2.3.3). For more detailed information, refer to the above mentioned annexes.

As stated in the AOQ, No.13, all laboratories in the Biological Sciences Department of the Eastern Mediterranean University can be classified under Biosafety Level P1 because the work conducted there mainly involves well-characterized agents, which do not cause diseases in adult humans and are not hazardous to the environment.

The University claims that the IT services are provided at the highest level. The Eastern Mediterranean University has a strong IT infrastructure with over 5,000 computer systems. There are over 70 computers at the university departments, buildings and research laboratories connected through a Gigabit Ethernet-based network. A computer laboratory of the University is capable of housing 50 people (see Annex 17). The University servers offer a Students Portal for students and a Family Portal for their parents. In Students Portal, a student can access electronic mails and academic information, register for courses online and re-

quest student documents. With the help of the Family Portal a student's parent can have easy access to their child's personal information, courses, academic performance, tuition fees, etc. as well as University news (see Self-Evaluation Report, 2.3.3).

Besides this, the University also has its own radio station and TV channel. EMU Radio is broadcasted locally and online, whereas EMU TV works in cooperation with the national media corporation Bayrak TV and has local and satellite broadcasting (see Self-Evaluation Report, 2.3.3).

Students of the program enjoy access to the University Central Library. According to the information provided in Paragraph 2.2.2 of the Self-Evaluation Report, the Central Library is a four-storied building with an enclosed area of 7000 m<sup>2</sup>. The building is equipped with Wi-Fi and a central heating and cooling system. Its capacity is about 1,200 seats. The library is open for students and staff members from 09:00 to 22:30 on working days and from 10:00 to 20:00 at weekends. During exam periods, the library funds are available till 1:00 and the 1st floor stays open throughout the night.

The Central Library of the Eastern Mediterranean University can offer its students approximately 160,000 published books, 90,000 full text e-books, 150 items of journals/magazines, more than 10 e-magazines (online access), 2,000 printed and 400 digital Master's and PhD theses of university graduates, 2,000 audiovisual materials (CDs, DVDs, etc.), about 28 online database memberships and 12 memberships in online bibliographic information databases (for the list of the online databases, refer to Annex 18). The biology-related sources include 355 books, 3,700 electronic full-text books, and 260 magazines. Moreover, an interlibrary loan service is also available due to collaboration with nearly 100 university libraries in Turkey. A single search engine enables quick search throughout the entire database of the library.

Paragraph 2.2.3 of the Self-Evaluation Report states that the academic staff is entitled to research grants funded by the University or the Republic of Turkey, which can be an extra source of finance for the Department of Biological Sciences.

### **2.3.3 Quality assurance**

In order to ensure quality of studies the Eastern Mediterranean University has adopted the Regulations for Academic Assessment and Quality Improvement

(Annex 21). The aim of these regulations is to state the basic principles for evaluation and improvement of the quality of educational and research activities as well as the administrative services at the Eastern Mediterranean University. These regulations also specify principles for approval and recognition of the quality level for an independent external assessment (see Self-Evaluation Report, 1.6.1).

As stated further in Paragraph 1.6.2 of the Self-Evaluation Report, the Department of Biological Sciences complies with the requirements of the Regulations for Academic Assessment and Quality Improvement. In particular, the Department Board, composed of four full-time instructors and a representative student, is responsible for controlling operation of other sub-committees (such as a discipline committee and an ethics committee). Furthermore, the Department Board addresses and investigates students' individual problems.

Trends in course evaluation are monitored by the Head of the Department. At the end of each semester, students are encouraged to fill out an evaluation form (see the AQQ, Attachment 2), which is available in the on-line student portal. Students are integrated to the internal quality assurance process due to the open-door policy of the University, meaning that they can refer to any faculty or administration member directly to express their comments and complains. Furthermore, elected students take part in decision-making committees including Departmental Board, Faculty Board and Senate Meetings (see the AQQ, No.14).

Any arising questions can be clarified at separate meetings with instructors, which take place once per semester. As for evaluation of the student workload, the University asserts that a survey has been designed and is regularly applied by instructors to check if students' evaluation of workload corresponds with their calculations (see Self-evaluation report, 1.6.4). At the moment, research activity at the program is evaluated by considering the instructor's publication records at the time of their promotion. In the future, when there will be Master's and PhD programs offered at the department, students will also be involved in the research evaluation process (AQQ, No.14). Evaluation of the practical component of the program is conducted by means of observations and guidance of students during laboratory sessions, examining laboratory reports, and grading students' performance at the laboratory examinations (AQQ, No.14).

Regarding graduates' evaluation, no such assessment has been conducted so far as the first batch of the "Molecular Biology and Genetics" students is expected

to graduate in July 2015. However, for the follow-up evaluation of the practical relevance of the program, the following measures are planned: creating a database of graduates including their contact information; obtaining their updated feedback regarding further studies or work placement; establishing a graduate alumni network; and inviting program graduates to career days (see Self-Evaluation Report, 1.6.3).

In compliance with Paragraph 1.6.7, the University is committed to providing high-quality student counseling and mentoring. For this purpose, the Head of the Department of Biological Sciences appoints 4 full-time instructors as advisors for the "Molecular Biology and Genetics" students. The advisors are responsible for providing guidance to newly enrolled students, assisting in registration procedures, spreading relevant information among the students of the program, monitoring their attendance and performance, helping underachievers, and many others (for the whole list of duties, refer to Paragraph 1.6.7 of the Self-Evaluation Report). Beside the advisors, there are also faculty and department assistants who are also supposed to support students. Through tutoring they address such tasks as improving report and essay writing, revision of any particular biology-related discipline, etc. (see Self-Evaluation Report, 1.6.7).

The University rejects any discrimination on the grounds of gender, religion, culture, personal background or race and illustrates this with the data for the undergraduate program in question. At the "Molecular Biology and Genetics" program, there are students from 20 different countries including the Turkish Republic of Northern Cyprus, Turkey, Botswana, Nigeria, Palestine, Iran, Mauritius, Jordan, Cameroon, Somalia, Zambia, Tajikistan, Korea, Sudan, Syria, Yemen, South Africa, Ethiopia, Saudi Arabia, and Libya. Currently there are 119 female students (60 % of all students) and 82 male students (40 %) at the study program (see Self-Evaluation Report, 1.6.7).

Regarding students with physical disabilities based on the recommendation of the University Executive Board and the approval of the Board of Trustees, citizens of the Turkish Republic of Northern Cyprus with a disability degree of 40% and above are eligible for a scholarship. The scholarship depends on the set quota and the results of the EMU entrance requirements and is granted till the student's graduation (see Self-Evaluation Report, 1.5.2).

## 2.4 Information about the University

The foundation of the Eastern Mediterranean University started with the establishment of the Institute of Higher Technology in 1979. In 1986, following the decision of the governments of the Turkish Republic and the Turkish Republic of Northern Cyprus, the Institute of Higher Technology was converted into a state university assuming the name of the Eastern Mediterranean University. One by one, new faculties started to offer study programs. In 2005, the Eastern Mediterranean University became a full member of the European University Association (EUA) and the International University Association (IUA). The University has attained accreditation of widely recognized agencies for study programs in different spheres of knowledge (see Self-Evaluation Report, 3.1).

The Eastern Mediterranean University is one of the state universities in the Turkish Republic of Northern Cyprus. The University's mission is to give contemporary and quality education of international standards, conduct research, contribute to the needs of the society, and serve as a model for multicultural diversity (see Self-Evaluation Report, 3.1 and 3.1.1).

The Eastern Mediterranean University has 91 undergraduate programs (mostly offered by faculties; some offered by schools within the university) and 73 post-graduate and doctoral degree programs launched by 11 faculties, 5 schools, and Foreign Languages and English Language Preparatory School. Currently, the University has approximately 16,645 students from 85 different countries.

The Faculty of Arts and Sciences traces its roots back to the mid-80s when the Eastern Mediterranean University had just been founded. The study programs running at the Faculty of Arts and Sciences include the following: Mathematics (B.S., M.S., and PhD), Mathematics and Computer Science Information Systems (MS), Applied Mathematics and Computer Science (M.S. and PhD), Turkish Language and Literature (B.S.), Translation and Interpretation (B.S.), Psychology (B.S.), Developmental Psychology (MS), Physics (M.S., and PhD), Chemistry (M.S., and PhD), Molecular Biology and Genetics (B.S).

The "Molecular Biology and Genetics" Bachelor program launched in 2011 at the Department of Biological Sciences, Faculty of Arts and Sciences is the first undergraduate program in this field in North Cyprus.

In its Self-Evaluation Report, the Eastern Mediterranean University emphasizes the research component recognizing it as a fundamental element of a modern



university. For this reason, the University houses numerous well-equipped research centers (for their list, see Self-Evaluation Report, 3.1.1). The University will continue promoting state-of-the-art research and encouraging publications, as well as aims to increase quantity, quality and scope of its research activity (see Self-Evaluation Report, 3.1.1). At the departmental level, efforts are undertaken to construct new dry and wet laboratories. The Department of Biological Sciences has expanded its staff by one full-time member and two new part-time instructors.

### 3 Expert reports

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### 3.1 Preliminary remarks

The Accreditation Agency in Health and Social Sciences (hereupon, the AHPGS) was commissioned by the decision of the Eastern Mediterranean University (hereupon, the University) for the accreditation of the study program “Molecular Biology and Genetics” (Bachelor of Science). For external evaluation, the University can commission certified national and international agencies possessing “the Registration Certificate for Quality Assessment” (Chapter 6, Art.7 of the Regulations for Academic Assessment and Quality Improvement at Eastern Mediterranean University).

The AHPGS is listed in the European Quality Assurance Register (EQAR) and is a full member of the International Network for Quality Assurance Agencies in Higher Education (INQAAHE). In 2006, the AHPGS joined the European Association for Quality Assurance in Higher Education (ENQA). Since 2012, the AHPGS is a member of the Network of Central and Eastern European Quality Assurance Agencies in Higher Education (CEENQA).

The main focus of the following accreditation procedure is the assessment of learning outcomes and objectives of the study program, its curriculum structure, examination system and transparency, sufficiency of teaching forces and the adequacy of learning facilities, implementation of the results of quality assurance in terms of further development of the study program and the implementation of equal opportunities for all University members involved.

The accreditation was carried out according to a structured procedure and the accreditation criteria, which were developed by the AHPGS in compliance 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 criteria are divided as follows:

- 1) Program Aims and Learning Outcomes
- 2) Curriculum Design
- 3) Staff
- 4) Facilities and Learning Resources
- 5) Study Process and Student Assessment

## 6) Program Management

The evaluation of the study program “Molecular Biology and Genetics” and the subsequent decision on its accreditation was carried out according to an agreed structure.

As the first step, the documents submitted by the University were reviewed by all nominated experts with regard to the specified criteria as well as disciplinary and substantive aspects.

The second step was implemented when the expert group carried out an on-site visit at the University. The results of the written evaluation served as the basis for discussions with members of the University and program management during the visit. The objective of the on-site visit was to clarify the remaining open questions and verify the statements provided in the documents submitted by the University.

The third step was the preparation of the Expert Report by the expert group. The report is structured in compliance with the accreditation criteria approved by the AHPGS. 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 basis for the statements made in the Expert Report.

The last step of the procedure is the decision regarding the accreditation of the study program of the University. The decision is carried out by the Accreditation Commission of the AHPGS.

The following experts were appointed by the accreditation commission of the AHPGS for the evaluation of the study program:

As representatives of administrative and higher education institutions:

**Mr. Dr. Rolf Heusser**

Director of National Institute for Cancer Epidemiology and Registration,  
Zurich, Switzerland

Former Chairman of the European Consortium of Accreditation in higher Education (ECA)

**Mr. Prof. Dr. Hans-Jörg Jacobsen**

Professor (em.) and former Head of the Department of Plant Biotechnology, Institute of Plant Genetics, University of Hanover, Germany

Member of the Advisory Council on genetic diversity of the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL), Germany

As student representatives:

**Kai Thorben Selm**

Emergency Medical Assistant, Student of Human Medicine at the Ludwig Maximilian University of Munich (absent during the on-site visit).

### **3.2 The study program to be accredited**

The main objective of the bachelor study program “Molecular Biology and Genetics” offered at the Department of Biological Sciences of the Eastern Mediterranean University is to provide students with thorough theoretical and practical knowledge and skills in a number of related fields such as biology, biochemistry, molecular biology, genetics, microbiology, physiology as well as interdisciplinary areas including neurogenesis, genomics, bioinformatics and computational biology. The program strives to provide its students with hands-on laboratory experience and teach them up-to-date techniques, including DNA extraction, polymerase chain reaction, gel electrophoresis, etc. Students are expected to acquire key skills in reading and understanding scientific literature in their sphere of knowledge, critical thinking, data analysis as well as problem-solving. Moreover, the program provides opportunities for personal development and improvement of such skills as working in a team, time management and communication.

It is as a full-time study program with an intended duration of 4 years/8 semesters. The study program comprises 40 courses in total, of which 34 are obligatory and 6 are electives. There are usually 5 courses planned for each semester. The total workload constitutes 7,200 hours, of which 2,860 are contact hours and 4,340 are independent study hours (these numbers are calculated based on the approximate amount of hours students need for self-study). The program does not require a graduation paper or a research project at the end of studies. There is no mandatory internship module, though the program curriculum includes approximately 420 hours of hands-on practical experience.

The program applies the University’s internal credit system. Hence, students’ performance is evaluated based on the results of a Grade Point Average (GPA) and the Cumulative Grade Point Average (CGPA). GPA is calculated by dividing the sum of the credits received in all courses registered during one semester by the

total credit hours of the same courses. CGPA is calculated by dividing the total credits received from all courses a student has completed since joining the program by the sum of the credit hours of these courses. According to the *University Regulations for Education, Examinations and Success*, Art.20 (2), a student with a GPA score with at least 2.00 is considered to have successfully completed a course. To successfully complete the program, students need to pass all obligatory examinations envisaged in the program courses and have to obtain the minimum of 2.00 CGPA score out of maximum 4.00 (for details, see the *By Law for Examinations and Assessment* and the *University Regulations Education, Examinations and Success* published on the official website of the University Registrar's Office).

Based on student surveys, the program management has estimated the amount of ECTS credit points awarded for each course of the curriculum. Thus, students are expected to obtain 240 ECTS credit points (CP) by the end of their studies.

Upon completion of the program, graduates are awarded with the title 'Bachelor of Science' (B.S.).

The "Molecular Biology and Genetics" bachelor study program accepted the first batch of students in the academic year 2011/2012 and the first graduates are expected to complete their studies in July 2015.

Student admission is carried out in the Faculty of Arts and Science in accordance with the official regulation document *EMU Entrance Exams and Student Admission By-Law*. There are specific admission requirements for 3 types of applicants: citizens of the Republic of Turkey, citizens of the Turkish Republic of Northern Cyprus (TRNC), and applicants from countries other than the Turkish Republic and TRNC, in other words, from third countries. In order to be admitted to a four-year bachelor program, all applicants have to provide a high school certificate or equivalent.

The amount of tuition fee for a newly registered international student for the academic year 2014/2015 constituted 7,220 \$, which is approximately 6,112 €.

Graduates of the program are eligible to work in private or state hospitals; they are also expected to find employment in private diagnostic laboratories, research institutes, and pharmaceutical companies. Besides, graduates have the option to do additional pedagogical training in parallel to their studies in the program. Student can apply for the pedagogical training upon the completion of the first year

in the “Molecular Biology and Genetics” program. As the University underlines, there is a constant need for teachers specializing in biology because biology is one of the core science subjects taught at university and high-school level in Northern Cyprus.

### **3.3 Expert report**

The on-site visit was carried out on 9 January 2015, according to the previously agreed schedule. Representatives from the head office of the AHPGS accompanied the expert group.

The expert group met on 8 January 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 the uprising questions. Furthermore, they prepared the plan of the on-site visit of the University.

In the course of the on-site visit, experts conducted discussions with the University management (Provost), representatives of the Faculty of Arts and Sciences, the Chair, Vice Chair and the teaching staff of the program “Molecular Biology and Genetics” as well as with students currently studying in the program. Furthermore, they inspected the learning premises of the program students, such as lecture halls, seminar classrooms, library, and computer classes. Besides, experts had the opportunity to see the equipment and the capacity of the laboratories.

In the course of the on-site visit, the University submitted the following additional documents to the experts group: booklets and brochures containing the information about the academic strategy and administrative structure of the Department of Biological Sciences, publications list of the academic staff of the Department, course syllabus samples of the program “Molecular Biology and Genetics”, a list of international students enrolled in the program, disability policies of the program, a sample of a students’ evaluation of study workload, Strategic plan of the Faculty of Arts and Sciences, Report of the Faculty management, Strategic plan of the University (2012-2015), the University Quality Assurance Handbook, and a list of accreditations obtained or in progress by other programs of the University.

The Expert Report is structured in compliance with the accreditation criteria approved by the AHPGS. The study program will be discussed 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, results of discussions with the representatives of the University, Faculty of Arts and Sciences and the Department of Biological Sciences serve as the basis for the statements made in the Expert Report.

### **(0) Introduction and comprehensive remarks**

The Eastern Mediterranean University is a public higher education institution situated in the Turkish Republic of Northern Cyprus. According to the *Strategic Plan* of the University, the mission of the Eastern Mediterranean University is to offer contemporary, sustainable and quality education at international standards, create opportunities for research, contribute to the needs of all stakeholders and the society, and serve as a model for multicultural diversity.

The University was founded with the establishment of the Institute of Higher Technology in 1979. In 1986, following the decision of the governments of the Turkish Republic and the Turkish Republic of Northern Cyprus, the Institute of Higher Technology was converted into a state higher education institution assuming the name of the Eastern Mediterranean University. In 2005, the Eastern Mediterranean University became a full member of the European University Association (EUA) and the International University Association (IUA).

The University encompasses 11 faculties, 5 schools and a Foreign Languages and English Language Preparatory School. There are 91 undergraduate and 73 postgraduate programs. Furthermore, there are approximately 20 study and research centers. Currently, the University hosts over 16,500 students from 85 different countries.

As can be seen in the *Strategic Plan* of the University, the aspect of internationalization stands first in the list of the University's policies and objectives. Apart from becoming one of the leading academic institutions in the Middle East, North Africa and Eastern Mediterranean, the University is planning to commence its promotion in Balkan countries, as it became apparent from the discussions with the Vice Rector and the representative of the Institutional Development and International Academic Affairs Office of the University.

The Faculty of Arts and Sciences was established in 1986. The mission of the Faculty is to offer education in the arts and sciences at a high standard to students of the Faculty as well as to students of other faculties, to conduct research at international standards, and to serve the needs of the society.



The “Molecular Biology and Genetics” bachelor program launched in 2011 at the Department of Biological Sciences, Faculty of Arts and Sciences, is the first undergraduate program in North Cyprus in this field. At the moment, there are 225 students enrolled in the program, of which 62% are international students, 30% are Turkish Cypriots, and 8% are students from the Turkish Republic.

During the on-site visit of the University, the experts held discussions with the representatives of the University management, representatives of the Faculty and the program administration, full-time and part-time instructors, and students currently studying in the program. Aspects such as the strategic objectives of the program, the quality assurance system, congruence of the program with the Bologna process, application of the ECTS credit points, admission requirements, international exchange and career opportunities were the main subject of the sessions.

These discussions revealed the international orientation of the Department of Biological Sciences, in particular, and of the University, in general. Political isolation of the Northern Cyprus and lack of official access to the European academic market were repeatedly named as the main challenges of the University on its way to establish and enhance relationships with western higher education institutions. The program and the University as a whole tend to attract students from Asian, African and Mediterranean countries. This fact creates the unique international and intercultural atmosphere of the University campus.

The experts made a clear statement that political disputes should not hamper the development of research and academic exchange in the fields of science, and even more so when it concerns natural and medical sciences. As representatives of the European system of higher education and as scholars working according to the requirements of the Bologna process, the experts evaluated the study program with the objective to give constructive feedback on how the study program can be made more compatible and competitive with similar programs offered in European universities.

With regard to the expectations from the accreditation procedure, the program management articulated their intentions to improve the infrastructure and the quality of teaching, and also to implement the necessary changes in the curriculum of the program with the help of recommendations articulated in the Expert Report. The representatives of the Department Chair explained that they are planning to analyze the curriculum and the program in general when the first

group of graduates will finish their studies in July 2015. The employment situation of the former students is expected to serve as a solid basis for empirical analysis of the program learning outcomes and their better adaptation to the requirements of the existing labor market situation.

### **(1) Program aims and learning outcomes**

The objective of the study program is to train skilled molecular biologists and geneticists who can explore and evaluate technological and scientific developments in biological sciences and related disciplines. Furthermore, the program aims at providing its students with the ability of critical thinking, it strives to ensure a strong foundation for students to develop their laboratory skills and use of recent technologies, and it strongly encourages students' engagement in research projects in biological sciences.

According to the University, the rationale behind the establishment of the program is the fact that there is a demand for microbiologists, biologists, and molecular geneticists in the health care sector in Northern Cyprus and the third countries sending students. The University predicts favorable labor market situation for its graduates, judging by the current rise of health sciences and services in the country. Hence, the aim of the program and of the Department of Biological Sciences is to improve the availability of skilled workforce in the given field.

Based on the documents provided by the University and on the information from the on-site visit, the expert group concluded that the program is practice-oriented as it trains future specialists working in a laboratory environment. This conclusion is supported by the facts that the program curriculum, namely Biology courses and program specific area courses, offer plenty of laboratory assignments with mandatory attendance. Moreover, the program management pays a lot of attention to the sufficiency and adequacy of laboratory equipment.

At the same time, the management of the program strives to develop a research-oriented study program, which will then enable students to continue their education on a master level. The Department of Biological Sciences is planning to introduce a graduate level program in bioinformatics and computational biology as a logical next step. While an experimental master program in the field of molecular and genetic sciences is expected to have a very high cost estimate, such a project is evaluated to be financially more feasible with the prevailing focus on informatics. The curriculum of the program "Molecular Biology and Genetics"

includes such obligatory courses as Introduction to Computer Science I and II, Database Management Systems, Bioinformatics and Computational Bioinformatics, and such selective courses as Computational Biology and Computational Neuroscience, which already prepare students for the respective master level program.

However, there is no graduation paper or research project required at the end of the B.S.-program. Experts consider a Bachelor thesis to be a significant element of studies because its whole purpose is to demonstrate the ability of a student to autonomously define a scientific question/problem and autonomously deal with it within a determined period of time using academic methods of research, reading and writing. In other words, such a paper functions as an effective tool to measure the level of obtained skills and competences of a soon-to-be graduate. At the same time, it prepares students for master's degree studies, where scientific research is one of the central objectives. Therefore, the experts strongly recommended the program management to introduce a module dedicated for writing an experiment-based graduation paper.

The expert group observed that the program strives to provide its students with sufficient practical laboratory training and to equip them with analytical skills for successful employability upon graduation. Yet at the moment, the program cannot confirm the employability of its graduates and, thus it cannot demonstrate the full attainment of all its aims, because the first graduates are expected to finish their studies only in July 2015. In this regard, the experts strongly suggest the program management to develop effective mechanisms for monitoring the professional growth of their former students, for instance, through organization of the program's Alumni group, annual meetings of former and current students, various surveys or continuous communication with graduates by means of internet. This would enable the Department to gather data and analyze the position of the program and its students in the job market, to reveal whether the envisaged employment positions correspond to actual ones, and to adapt the program's outcome orientation, curriculum structure and study processes to the demands of the society.

One of the most prominent characteristics and objectives of the study program "Molecular Biology and Genetics" is to enhance its internationality in terms of the learning content, number of students from abroad, and the academic exchange with foreign higher education institutions. The program successfully

fulfills this aspect with regard to the learning content of the courses, which are taught by professors and instructors trained in such countries as the USA, Turkey, United Kingdom, Germany, and other. The program instructors have visited, taught, and conducted research in a number of universities from the named countries and they are well informed about current international developments in the respective fields of science.

Due to the restrictions in cooperation with European universities, the program appeals primarily to applicants from Asian, Arabic and African countries, among them Nigeria, Iran, Turkey, Iraq, Syria, Palestine, Libya, Sudan, Jordan, Cameroon, Tajikistan and other, which constitute a developing market with an increasing demand for higher education. This strategy of the program is in compliance with the general strategy of the University: to be competitive in the region encompassing the Middle East, North Africa and Eastern Mediterranean. The program management emphasizes that although their students cannot take part in such European exchange programs like *ERASMUS*, it is possible for them to establish contacts with European and American universities on an individual basis.

Concerning the internationality aspect, the experts give positive evaluation of the fact that the program actively pursues its objective to establish academic networking with peers from abroad. At the same time, the experts recommend further elaboration and enhancement of possible exchange and cooperation opportunities for both students and the teaching staff. From the discussion with the program students, it became clear that many of them are intending to continue their academic studies in European and American higher education institutions or to gather working experience in these countries. This fact has to be taken into account by the program management in order to maintain the relevance of its learning and training outcomes not only to the national labor market but also to students' international interests, as well as to the programs' own international ambitions.

From the experts' point of view, the program aims and learning objectives are attainable and are in congruence with the national needs and international requirements. Furthermore, the program goals also correspond to the goals and objectives of both the Faculty of Arts Sciences and the University. The program appears to successfully pursue its intended learning objective: on the one hand, it provides good laboratory training opportunities and develops analytical skills

for the professional growth in the employment; on the other hand, it prepares students for advanced graduate studies.

As opportunities for further development of the program, the experts call attention to the introduction of an experiment-based graduation paper and to the enhancement of international exchange opportunities. Furthermore, they strongly encourage the program management to establish and apply alumni-tracking measures starting with summer 2015 in order to improve its own and its graduates' position in the local and international labor market.

The experts conclude that the study program fulfills the discussed criteria.

## **(2) Curriculum design**

The "Molecular Biology and Genetics" bachelor program comprises 40 courses, out of which 34 are obligatory and 6 are optional. There are 5 courses planned for each semester; thus, the regular study period in the program is 8 semesters (4 years), with the possibility of extension. Obligatory courses can be divided into program-specific and those offered in collaboration with other faculties and departments. Consequently, there are 18 Biology-specific courses and 16 courses designed together with other departments. Out of 6 optional courses, there are 3 university elective and 3 area elective courses. Area electives are specialized courses aimed at covering specific topics of the field in more detail, whereas University electives can be both specialized and general.

According to the University *Quality Assurance Handbook*, all study programs are annually revised by the University Curriculum Committee (UCC), whose aim is to prepare guidelines for submitting curricular proposals. Each academic unit of the University, including the Department of Biological Sciences, can propose the revision and cancelling of components of a program curriculum via the Faculty representatives at the Committee. Any given curricular revision proposal then has to be approved by the UCC and the Senate.

For all program courses students are awarded with 'EMU credits' based on the University's internal credit system. For the purpose of the evaluation process, the program management has calculated the equivalent credit workload of the program according to the ECTS credit point (CP) system. Thus, 3-4 EMU credits and 6-8 ECTS CP are awarded for program-specific courses, 2-4 EMU credits and 5-7 ECTS CP are given for courses taught in collaboration, and 3 EMU credits and 5 ECTS CP are awarded for university and area elective courses.

Provided that the student study workload constitutes 7,200 hours and that 1 ECTS CP is equal to 30 hours of workload, the program requires to obtain 240 ECTS CP, which is similar to the bachelor's degree requirement applied in European higher education institutions<sup>7</sup>. However, the ECTS system has not yet been officially implemented in the program because the acquisition of the ECTS system on the institutional level is still in process.

The experts underline that consistent application of the ECTS system is an important condition for the program to adapt to the standards of the Bologna process. The main idea of using ECTS CP is to create a conjoint framework of qualifications and facilitate the recognition of these qualifications all over Europe, to increase the role and use of learning outcomes, to make study programs and education processes more transparent and to promote student mobility. Hence, adoption of ECTS CP will allow student exchange and compatibility of the program with similar ones offered in European universities<sup>8</sup>.

The experts are aware of the fact that the program "Molecular Biology and Genetics" functions within the internal legal framework of the University and according to the criteria of the Turkish Higher Education Council (YÖK), which require the usage of a different evaluation system of students' performance. Nevertheless, they observe that the program has the possibility to apply ECTS CP parallel to EMU credits, which they strongly encourage. However, this parallel application has to be consistent and continuous. Having studied the submitted documents, the experts noticed that most of them indicate only EMU credits and do not show the amount of ECTS CP awarded for the courses and other activities envisaged in the program. For instance, not all course descriptions include information about the number of ECTS CP.

Therefore, the experts have concluded that the program does not properly communicate the information about ECTS CP.

To the aspect of course description, the experts have also noticed that learning objectives are often outlined in a very general manner. During the on-site visit, the Department management provided the experts with descriptions of Biology-specific courses. These descriptions contain more detailed information on how many ECTS credit points are awarded for the course and what learning outcomes and competences are aimed by the instructors, whose names are also

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<sup>7</sup> See *ECTS User's Guide*; section 3.3. ECTS, levels and level descriptions

<sup>8</sup> See The Bologna Declaration of 19 June 1999

indicated. For the purpose of transparency of the curriculum structure, the experts require the program to prepare similarly full description of all obligatory courses attended by program students. At the same time, any substantial changes in key learning outcomes should be based on legitimate and clearly defined reasons.

There is no obligatory graduation paper or a research project envisaged in the curriculum. The University explains that the program module structure follows the Turkish Higher Education Council (YÖK) criteria, according to which graduate projects for Molecular Biology and Genetics program are not required. The department is planning to offer ongoing research opportunities available for undergraduate students.

Based on the information from the documents provided and the discussions held during the on-site visit, the experts observed that the main forms of instruction in the program are lectures, presentations and laboratory experiments and assignments. Except for written examinations, the program does not offer its students enough opportunities to train in academic writing or in preparing a complete report on a research or laboratory work. Taking these facts into consideration, the experts propose to introduce an obligatory module/course dedicated to a graduation paper project. According to structural guidelines for bachelor and master study programs applied in Germany<sup>9</sup>, the student workload for writing a bachelor's thesis may be at least 6 ECTS CP and it may not exceed 12 ECTS CP.

There are several facts that demand to submit a graduation paper at the end of the program. First of all, the program management wants to comply with the European standards of higher education and in most of the European countries a final paper is an obligatory part of the study process. Furthermore, as it was already mentioned, many of the students have expressed their wish to continue their studies on a master level, which will then require of them well developed academic writing skills and methodological competence in research conduct. Finally, the program management itself is planning to introduce a research-oriented graduate cycle program, thus it has to ensure that students of "Molecular Biology and Genetics" are well prepared for it.

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<sup>9</sup> *Ländergemeinsame Strukturvorgaben für die Akkreditierung von Bachelor und Masterstudiengängen* (Beschluss der Kultusministerkonferenz vom 10.10.2003i.F.vom 04.02.2010)

With regard to the curriculum plan of the program, the experts came to the conclusion that certain adaptations are imminent in the coming years. The total workload of the program constitutes 7,200 hours, of which 2,860 are contact hours. The program had conducted a survey in order to determine the amount of hours that students need for individual work/learning. The self-study time is calculated to include approximately 50 hours per module each semester. However, taking into account the large amount of weekly lecture (15-18) and laboratory hours (9-12), having looked at an example of ECTS calculations for the course *Human Genetics* (Attachment 2 in the submitted documents, where the self-study time constitutes more than 120 hours) and after the discussion with students, the experts had the impression that the total program workload is too high.

First of all, experts recommend that the workload, or in other words Students Investment Time (SIT) including the amount of self-study hours needs to be further estimated in order to obtain more objective and experience-related results through student questionnaires and monitoring. Further on, experts suggest lowering students' workload by evaluating their performance in some of the courses with pass or fail, instead of a numerical grade. This is applicable in courses that are not directly related to the program content like Chemistry or Physics, but which are indispensable elements in "Molecular Biology and Genetics" program. Here the experts would like to emphasize that the main idea of awarding ECTS credits is to indicate whether a student has achieved the learning outcomes or not; ECTS credits do not show how well a student has performed in the course. To say it differently, ECTS credits define whether a student has completed all workload hours and whether his or her achievements comply with the learning outcomes of the given course or not. Meanwhile, quality of a student's performance is expressed by an institutional or national grading system<sup>10</sup>. From the experts' point of view, not every obligatory course of the study program needs to be graded. In some of them, it is enough to pass the course with the understanding of its core principles and of how they can be applied in the area of specialization.

Another suggestion on how to reduce the workload and at the same time maintain the required amount of credit points, is to award students with credits for taking part in certain extracurricular activities, such as preparation of projects in the "Genetics club", attendance of Summer school classes, assistance of a pro-

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<sup>10</sup> Quoted from the *ECTS User's Guide*; section 4.2. Awarding ECTS credits



fessor in his or her research project, presentation of a report at conferences and other. The experts are convinced that such a reward will function as an effective motivation for students to inform themselves about recent developments in the fields of Molecular Biology and Genetics, learn how to conduct a laboratory research, and to become acquainted with other students and scholar with similar interests.

The experts have expressed their concern with the situation when program students have to attend such courses as Physics, Mathematics, and Chemistry together with students from other departments and faculties. In this case, students are required to learn aspects that might be redundant and even irrelevant to their specialty in life sciences. As it was explained by the Department management, at the moment, the course in Chemistry is specifically designed for the program, whereas courses in Physics and Calculus are shared with students from different departments. In this regard, the program management has to make sure that the study material, laboratory assignments, and learning outcomes of these courses are compatible with the learning objectives of the program "Molecular Biology and Genetics". Hence, the descriptions of the courses offered in collaboration with other departments should be revised and the learning outcomes should be reviewed.

Another consideration of the expert group concerning the study plan of the program is that it is quite degree specific whereas there are very few extracurricular topics covered. Therefore, it might be useful to introduce several elective courses on general competences with pass/fail grading.

To sum up, the curriculum design in general fulfills the European standard of differentiation between three cycles in the sector of higher education, the first cycle being the bachelor level. Indeed, the workload and the envisaged amount of 240 ECTS CP of the study program "Molecular Biology and Genetics" conform to the requirements of the *Framework for Qualifications of the European Higher Education Area*<sup>11</sup>.

Nevertheless, the experts point out that information about ECTS CP has to be presented in documents and course descriptions the same way as the EMU credits. With regard to the program workload, the experts accentuate that the optimal amount of study hours need to be further estimated through questionnaires.

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<sup>11</sup> See the official website of the Bologna Process: <http://www.ehea.info/article-details.aspx?ArticleId=73>

Moreover, the distribution of workload hours among different courses might be reconsidered in order to enable students to earn credits for extracurricular and a variety of elective courses offered on a pass/fail basis. The experts advise introduction of a graduation paper at the end of studies. Finally, they firmly encourage the revision of study process and learning outcomes of the courses offered together with other faculties and departments in order to verify their compliance with the objectives of the program.

The experts conclude that the program partly fulfills the discussed criteria. To fully comply with these criteria, the University has to meet the following conditions: it must review the course description of the curriculum in order to indicate the intended learning outcomes and the amount of ECTS CP students receive for having attained them.

### **(3) Staff**

At the moment, the Department of Biological Sciences consists of 4 full-time (two associate and two assistant professors) and 2 part-time instructors (with a doctor and a master degree, respectively). Besides, there are 4 laboratory assistants, a laboratory manager and an administrative manager, who contribute to the realization of the program.

The Department of Biological Sciences takes (rightly) a great pride in its team of instructors, who have earned their degrees, conducted research projects and trainings, and established professional contacts with various universities in the US, Netherlands, Austria, Turkey, Germany, the UK and other. Furthermore, most of the teaching staff has a solid record of scientific publications. Discussions during the on-site visit conveyed the impression of positive and dynamic interaction between the teaching staff and the students of the program. The instructors and particularly the management of the program expressed a strong dedication to the well-functioning of the study process in the program.

Given the fact that international students constitute the majority, the instructors show a great deal of professional competence and work experience in such multicultural environment.

In the process of teaching, instructors try to provide students with a broader perspective of current developments in their field of science accompanied with their personal knowledge and experiences. Moreover, the instructors encourage students to participate in extracurricular activities, for instance in the *Genetics*

*Club*, which is designed with the aim to expand students' areas of interest and improve their communicational, organizational and leadership skills.

To the experts question on their expectations and ideas on the improvement possibilities, the instructors mentioned implementation of small scale assessments of students' performance continuously throughout the whole semester. Besides, the instructors expressed their hope to receive more acknowledgment and academic, as well as financial, support from the European Union because it will enable the program to participate more actively in the social and scientific life of European higher education society.

As for the experts' suggestions, they emphasize that human resources of the program need to be enlarged due to a very high teaching load (12 hours per week not including administrative work) and the growing number of students enrolled in the program. Moreover, the Department is currently planning to introduce a master program at the Department. The program management confirmed that they will need additional instructors to teach graduate level courses and also supervise future master students in conducting research and then writing their final research paper. At the moment, lack of infrastructure and financial resources are the main hindrance for the program management to expand research opportunities and invite more instructors required for guiding new research projects.

To the aspect of support mechanisms applied in the Department, the instructors of the program mainly named team and personal methods of help. Given that it is a relatively small and very close group of teachers working in the program, such mechanisms seem to fulfill their function. Nevertheless, the experts underline that professional support should be based on clearly described system of responsibilities and functions, which ensures objective handling of each case that might occur at the department. More comments on this aspect are delivered in section 6.

Another question considered by the expert group is whether and to what extent opportunities for continuous education are offered to the instructors on the departmental, faculty, or university level. According to the Self-Evaluation Report, section 2.1.2, there are development-courses organized by the Continuing Education Centre within the Faculty and also paid summer leave for research funded by the University. The experts recommend the program to be more specific and

transparent in presenting the data on how many instructors have used these opportunities so far.

Given the fact that the teaching workload is quite high, the number of students is increasing and that the department is planning to introduce one or two master level programs, the experts recommend the program might require more teaching forces in the coming years.

To sum up, at the moment, the experts evaluate the criteria of human resources to be fully met.

#### **(4) Facilities and learning resources**

In the course of the on-site visit, the expert group had the opportunity to observe and evaluate the learning and training premises of the program. There is a laboratory that is specifically designed for the "Molecular Biology and Genetics" program. It has a capacity for 10 people and it is equipped with a sufficient amount of microscopes, pipettes, PCR-Machines, gel electrophoreses, fridges and freezers, etc. Then, the experts have visited the spacious Chemistry laboratory. There, it was confirmed that laboratory sessions for the Chemistry course are designed specifically for the program "Molecular Biology and Genetics". There are 4 laboratory and teaching assistants and a laboratory manager working in the program.

The computer class, seminar rooms, and lecture halls are all of good quality. The central library of the University is situated in convenient proximity to the program teaching premises. The library consists of four floors each with an ample amount of tables for students and computer stations. Students can access the University on-line bibliographic information library and on-line library data-base either through the university computers or through personal computers using their university password.

IT infrastructure of the program is on a good level: there is an on-line Student Portal, where students can control and organize their studies, and an on-line Family Portal for students' parents to keep track of their children's academic performance in the program, courses taken, and also to receive information about tuition fees. There is no internet-based learning platform or any other distance learning elements offered by the program. To this the program management replied that the program is very practice oriented and it requires personal presence of students in the courses.

The experts determined that the equipment and the number of learning premises at the Department are provided in a sufficient and professional manner. Organization of learning space in classes and laboratories complies with academic standards.

The experts concluded that the requirements of the criterion are fulfilled.

#### **(5) Study process and student assessment**

Study process of the program is regulated by general provisions of the University with regard to admission requirements and procedures, the EMU credit system, regulations on horizontal and vertical transfer of students within and from outside of the University, rules on examinations, assessment and grading of students' academic performance.

Information about the program "Molecular Biology and Genetics", its admission requirements and other details relevant to the program, is available on the webpage of the University. The program admission requirements comply with those described for undergraduate degree programs in the document *EMU Entrance Exams and Student Admission By-Law*. Admission to undergraduate studies is managed by the University's Registrar's Office. The admission process is categorized according to three types of applicants:

- Citizens of the Turkish Republic of Northern Cyprus are required to pass the University Entrance Examination. The application for the entrance examination functions simultaneously as an application for admission to the University.
- Citizens of the Republic of Turkey are admitted to the program through the Turkish National University Entrance Examinations. Applicants are chosen based on their results in Biology and Chemistry tests.
- Citizens of Third Countries (other than the TRNC and the Republic of Turkey) are admitted based on their scores in respective national school leaving examinations.

Applicants holding five IGCSE certificates are also admitted to the program, provided that one of their certificates is in Mathematics and another is in Biology, Physics or Chemistry.

All applicants, for whom English is a second language, are required to take the English Language Proficiency Test to prove that their language skills are good

enough for the university-level studies. For those who need additional preparation, the University offers the English Language Preparatory Year Program.

The experts determined that the admission process of applicants from TRNC and the Republic of Turkey is clearly defined and in compliance with the program learning objectives. These admission requirements of the program ensure that these applicants have the necessary level of subject knowledge. The English language requirements guarantee that students' competence in English will enable them to actively participate in classes.

However, with regard to language proficiency requirement, the program does not specify what English language tests (IELTS, TOEFL or other) are accepted and what minimum score is recognized as sufficient to be directly registered to the first year of studies in the program, in case an applicant has already taken such a test and can submit its results. This aspect must be clarified for the program to prove that it complies with the criterion of transparent admission requirements.

Furthermore, the experts determined a lack of clarity and transparency in the admission requirements to international students. Given the fact that national examinations and school systems in different countries might have their own specificities, it can be difficult to compare them with local standards. Although the University website offers information about the admission requirements, it is too common as it applies to all undergraduate study programs without considering specific requirements of an individual program. The University provides a list of institutionally accepted high school certificates, however, a mere name of a certificate is not a guarantee that an applicant succeeded in program-related school subjects. Therefore, the "Molecular Biology and Genetics" program management has to be more precise about the level of academic performance they expect from international applicants. Namely, there must be a set of requirements to the minimum average grade of a high-school certificate as well as to grades or the amount of study hours in certain subjects, e.g. Biology, Chemistry, Mathematics or other.

The study program has to delineate distinct requirements to foreign school certificates and examinations with the following availability of this material to the applicants on the webpage of the program. These standards shall serve as a touchstone for the legitimacy and objectivity of an admission decision, be it positive or negative.

The general study process of the program consists of 8 semesters each roughly lasting 16 weeks, of which 3 weeks are envisaged for midterm and final exams. The program encompasses 40 modules that can rather be considered as individual courses with a specific amount of credits, learning objectives and outcomes, methods of teaching, lecture and laboratory class topics, a list of reading material and methods of examination.

In the module descriptions, particularly of those offered in collaboration with other departments, it is not always indicated who is responsible for the implementation of the study processes in these specific courses. Taking into account that such courses as Chemistry, Calculus, and Physics are or should be adapted and taught according to the objectives of the study program, it is important to determine instructors who are responsible for the realization of these interdisciplinary courses.

Concerning the student support system, the University offers it through such units as Student Services Office, the International Centre, the EMU Psychological Counseling Service (EMU PDRAM), Alumni Office, the Career Unit, Student Portal and through instructors' office hours<sup>12</sup>. At the Department of Biological Sciences, 4 full-time instructors act at the same time as advisors. They assist students with registration for modules, distribute studies-relevant information among students, monitor students' attendance and performance and help under-achievers. There is an open door policy in the Department and, in addition to that, every instructor has official office hours. Beside full-time instructors, there are 4 laboratory assistants and an administrative assistant helping students.

Along with the University, the Department is against any discrimination on the grounds of gender, religion, culture, personal background or race. At the moment, there are students from more than 20 different countries. Of the total amount of 225 students currently enrolled on the program, 58% are female and 42% are male students. Students with a disability degree of 40% and above are eligible for a scholarship. The scholarship depends on the set quota and the results of the University entrance requirements, and is granted till the students' graduation. The Department is taking part in the University Campus Project, whose aims is to remove physical obstacles and adapt the campus to the needs of disabled students.

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<sup>12</sup> See the *Eastern Mediterranean University Quality Assurance Handbook*

In terms of financial support of students, the University has a well-developed scholarship system, which offers different levels of tuition discounts from 25%, 50% up to 100%. Students with high Grade Point Average score can apply for a scholarship also during their studies; all relevant information is provided on the official website of the University<sup>13</sup>.

From the experts' point of view, the program "Molecular Biology and Genetics" provides a high level of academic support and fair treatment of its students. Students of the program have confirmed that they are satisfied with the support measures, as well as the information provision system of the Department.

Examinations take place in accordance with the University regulations *By-Law for Examinations and Assessment*. Students' academic performance is evaluated in each course through midterm and final exams, as well as through laboratory assignments, presentations, and research assignments. Students can be required to pass the minimum of 1 and the maximum of 3 mid-terms and one final examination in each course every academic semester (*Regulations for Education, Examinations and Success*, Art.19). Examination questions are prepared by the respective course instructor. In courses taught by several instructors, examination questions are prepared by the course coordinator while others instructors can contribute to the process. Evaluation of examinations is carried out either by the course instructors or, in case of multi-groups, according to the agreement of all instructors.

According to the *By-Law for Examinations and Assessment*, students of the University have the right to appeal to the responsible academic staff to see all documents involved in the determination of their semester grade (Art.10). They have to communicate such a request within a week after the semester grades have been announced. The same period of time is envisaged for students to make appeals with regard to fairness of a mid-term grade or other assessment components, which they have to submit to the course instructor. A student who is not satisfied with the decision of the instructor has the right to further appeal to the relevant department chair within 3 days following the announcement of the instructors' decision. Similar regulations are applied in case of an appeal with regard to the semester grade, which has to be communicated to the responsible course instructor by the end of the registration period for the following semester.

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<sup>13</sup> See the University Registrar's Office website: <http://registrar.emu.edu.tr/eng/scholarships.htm>



At the Department of Biological Sciences, students whose attendance rate is lower than 70% are not admitted to the midterm and final exams, thus failing the exam. There are re-sit exams for students who have failed the course with the letter grades "D"- or "F" (both stand for "fail"), which usually take place at the end of Fall and Spring Semesters (excluding the Summer Term). Besides, there are make-up examinations for those students who could not take part or failed an examination due to a valid reason. In this case, students have to submit their explanation and request for re-examination to the course instructor in written form within three working days after the initial exam. For make-up exams students receive a temporary letter grade I (incomplete), which is later substituted with another grade, depending on the result the student achieves.

Each course has the credit-hour value, which is equal to the number of weekly lecture hours, whereas every three hours of laboratory or tutorial hours are considered as 1 credit hour. At the end of the course, the course instructor evaluates the student's performance with a letter grade; students who have obtained the letter grades from "A" to "D" or "S" are considered to have passed the course. The numerical equivalent of the letter grade is then multiplied by the number of credit hours. The received sum in all courses of the semester is then divided by the total amount of credit hours and this produces the student's Grade Point Average (GPA) for the given semester<sup>14</sup>.

The experts discussed the application of ECTS CP also with regard to grading methods and the functionality of the assessment system of the program. The experts recognized that there is a fundamental difference between the University's EMU system of credit calculation and that of the ECTS. The EMU system awards credits based on the level of students' achievement in a course/laboratory class and it focuses on the calculation of students' final average grades (GPA, CGPA). Meanwhile, the ECTS system differentiates between credit points and the grade students obtain during their studies. ECTS credit points collected by a student show that he or she has achieved the learning outcomes of the given course, in particular, and the qualifications envisaged by a specific study program in accordance with the national and European Qualifications Framework, in general. This means that bachelor students from various European countries are expected to graduate with a similar amount of credits (180-240) as evidence that they have reached the same level of competence

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See

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website:

[http://registrar.emu.edu.tr/eng/Academic/Academiccontents/grade\\_calculation.htm](http://registrar.emu.edu.tr/eng/Academic/Academiccontents/grade_calculation.htm)

and qualification in a specific field, whereas their grades are calculated differently according to the national grading systems. In fact, this characteristic of universal acknowledgement makes the ECTS system so attractive.

ECTS credit system is an additional grading scale to that of the institution, in other words, it does not replace the local grade.

The facts that the EMU credit system does not include individual study hours and that it involves a complicated calculation process, makes it difficult to compare it with the ECTS system. The experts agreed upon the fact that it is not clear how these two systems of ECTS and EMU credits are correlated in the program. As seen from the submitted chart of program-specific modules and modules taught together with other departments, courses with the same amount of EMU credits are often awarded with different amount of ECTS CP. For example, subjects as General Biology, Molecular Cell Biology II, and Molecular Genetics have 4 EMU credits but, at the same time, they are equal to 6, 7 and 8 ECTS CP, respectively. Such inconsistency must be explained and justified by the program. Therefore, the program has to provide a transparent and clearly described system of reference between EMU and ECTS credits. It has to be defined what achievements the EMU and ECTS credits are awarded for and how the amount of these credits is determined for each course of the curriculum.

Lack of continuous application of the ECTS system might create an obstacle for the program to integrate into the European academic exchange sphere. The same applies to a research-based graduation paper. Absence of these crucial elements can create complications for students who want to have their degrees recognized on the same qualification level in the EU. Consequently, the experts suggest a better development of the ECTS credit calculation in parallel to the EMU system on the program level and also on the institutional level.

Concerning the recognition of studies at other higher education institutions within and outside of the country, the vertical and horizontal transfers to the programs of the University are regulated by the *EMU Entrance Exams and Student Admission By-Laws*. Besides, in the *University Regulations for Education, Examination and Success* (§5), it is indicated that students admitted through transfer from other universities must take a minimum of half of the total credit-hours required by the relevant program for a student to successfully graduate from the University.

The experts concluded that the University transfer policies do not fully comply with Lisbon Convention on the recognition of qualifications<sup>15</sup>. According to it, recognition of prior studies shall be endowed unless substantial differences in are proven by the institution in charge of recognition. The University does not provide an adequate set of conditions for recognition or non-recognition of international students' earlier studies. Furthermore the University limits the applicants by saying that for an external horizontal transfer they can only be accepted to the second, third, fourth or fifth semesters.

According to the University, decisions on both external horizontal and external vertical transfers are taken by the faculty or school council. However, the Faculty of Arts and Sciences does not provide any specific regulations in this regard. Hence, the experts observe lack of transparency and clear structure behind the transfer policy of the University as well as the Faculty. The experts conclude that in order to be accredited according to the European standards, the program has to comply with the requirement of transparent methods of recognition of study periods completed in other higher education institutions.

Transparent methods of recognition should be based on an open system of translation of foreign grades and qualifications to the local standards so that the University can compare them and decide upon the level of academic performance of a transferring student. Here, experts underline that the program and the University, in general, need to implement the ECTS Grading Table<sup>16</sup> as a scale for a straightforward comparison of two or more grading system on a fair and transparent manner.

The first batch of graduates of the program is expected by July 2015. Therefore there is no analysis on the aspect of expediency of graduate placement available. For the follow-up evaluation of the practical relevance of the program, the program management plans to create a database of graduates including their contact information, to obtain updated feedback regarding further studies or work placement and to establish a solid graduate alumni network.

The system of students support is maintained by the program management on a high level. Similarly, examination system of the study program is suitable and effective for the evaluation of students' achievement in the courses. Students'

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<sup>15</sup> *Convention on the Recognition of Qualifications Concerning Higher Education in the European Region*

<sup>16</sup> See *ECTS User's Guide*, Annex 3

rights and actions in case of an appeal and re-examinations are well described. The teaching team of the Department assures objective and correct evaluation of students written assignments by involving several instructors in the process of correction.

As recommendations for further development of the program, the experts point out that the responsible instructors of each course have to be specified, particularly in case of collaborate courses. Admission requirements specific to the program, as well as the information about the ECTS CP, should be available on its official webpage.

The experts conclude that the program partly fulfills the discussed criteria. To fully comply with these criteria, the University has to meet the following conditions. First, the admission requirements for international students must be specified in terms of accepted language test scores and the general level of performance at school as well as in certain school subjects. Second, the program has to develop and present a system of reference between the ECTS and EMU credit systems with the explanation of criteria they are awarded for. Third, the program has to prove that it functions according to the requirements of Lisbon Convention, which requires transparent and objective recognition procedure of previous studies.

## **(6) Program management**

Quality assurance is regulated and implemented according to the *Regulations for Academic Assessment and Quality Improvement* and the *University Quality Assurance Handbook*<sup>17</sup>. According to the Handbook, the quality assurance policy of the University is to enhance the quality of academic programs, research and administrative work, which is to be achieved through clear definition of roles, responsibilities and activities of the teaching staff and students, provision of information on quality assurance measures, ensuring the availability of sufficient resources for the realization of academic programs, research and support systems.

In the list of the University objectives and policies, quality assurance is the second to be identified after the internationalization policy. The University has three main bodies responsible for the organizations and implementation of the quality

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<sup>17</sup> See on-line: [http://www.emu.edu.tr/announce/lsssu-EMU/EMUQASHandbook.htm#\\_Toc313717409](http://www.emu.edu.tr/announce/lsssu-EMU/EMUQASHandbook.htm#_Toc313717409)

assurance processes at the University. The University Quality Coordination and Evaluation Board, which is at the same time the University Executive Board, reviews evaluation reports, defines quality policies and ensures their implementation. Academic Units Evaluation and Quality Improvement Commission and the Administrative Units Evaluation and Quality Improvement Commission are both established by the University Executive Board and are responsible for the evaluation of quality improvement actions taking place in academic and administrative units, respectively. Every year, each of the two commissions prepares a report based on the annual evaluation reports they receive.

The University quality assurance process can be seen as a single cycle consisting of four connected stages:

- 1) The University develops a quality assurance policy in accordance with its strategic plans and objectives.
- 2) Quality assurance policies are then implemented.
- 3) There are internal and external evaluations carried out at the University in order to determine whether progress has been made and whether it complies with the set objectives.
- 4) The University implements evaluation and review of the received outcomes with the view to improve educational and administrative activities and objectives, which can eventually lead to constructive changes in the University quality assurance policy.

Both students and teachers are involved in the quality assurance measures applied in the program "Molecular Biology and Genetics". Students evaluate the course and the work of instructors at the end of every semester in each course. They have to complete an anonymous on-line questionnaire where they have to determine the level of agreement with statements on the level of teaching, instructors' presentation of the subject material, effectiveness of assignments, fair treatment of students during the classes and other. The complete questionnaire is then submitted to the central computer system. Instructors can see the results of students' evaluation on the academic staff portal after they have submitted the final grades for the semester. Thus, students' feedback serves as an objective and empirical basis for the instructors of the program to revise their teaching methods and improve their didactic as well as academic competences.

Program instructors also evaluate their academic performance and exchange feedback on the teaching process with their peers. Departmental Board meetings are defined by the program management as the one of the main methods of quality assurance in the program. The Departmental Board consists of four full-time instructors and a student representative. Meetings are held on a weekly basis where the members of the Board discuss current issues and take decisions. Optionally, a wider departmental meeting may be held with the inclusion of the teaching assistants as well as the laboratory manager.

In accordance with the *University Quality Assurance Handbook*, the study program has to comply with the accreditation requirements of the Higher Education Council of Turkey (YÖK), and the Higher Education, Planning, Accreditation and Coordination Council of Northern Cyprus. The curriculum of the program, as well as the conformity of the study process to the institutionally determined criteria, are annually revised and approved by the University Curriculum Committee and the University Senate. The program actively contributes to the quality assurance system of the University. It ensures the involvement of both students and instructor in the evaluation of the education process.

The experts came to the conclusion that the quality assurance processes conducted in the “Molecular Biology and Genetics” program correspond to the overarching quality assurance measures of the entire University.

However, there are several observations and recommendations that have to be taken into account with regard to quality assurance measures. Results of students’ on-line evaluation should be made available not only to the instructors but also to students themselves. The information can be communicated to students in the form of numerical results and statistical charts. This is important in order to guarantee transparency of feedback outcomes and to clarify reasons for necessary changes in teaching and organization of the courses. Furthermore, awareness of their actual input into the realization of the program will serve as a strong motivation for students to more actively contribute to the maintenance and improvement of teaching quality in the upcoming semesters.

The discussions on quality assurance measures with the representatives of the University management, Faculty of Arts and Sciences, and the Department of Biological Sciences conveyed the message that there is a discernible lack in management and communication of responsibilities between different units of the institution. In other words, the experts observed ambiguity when, for in-

stance, the program management was asked to define of the chain of bodies involved in the revision of the program curriculum or a student appeal. The Department appeared not to have yet developed or actually implemented a clearly regulated system of actions in case a complaint or a suggestion by a student. Formal mechanisms of hierarchical cooperation in quality assurance procedures need to be further elaborated.

The experts agreed upon the fact that the Department of Biological Sciences is quite young and has not yet faced serious problems or questions requiring the involvement of all quality assurance units. Nevertheless, absence of experiences should not serve as an excuse for lack of precision in the quality assurance mechanisms. Therefore, the experts emphasize that the stages of the quality assurance circle described earlier have to include the bodies responsible for implementation and define the concrete actions they have to carry out. Finally, the experts strongly encourage the program as well as the University management to further develop the Quality Assurance system in a practice-oriented way. This should be achieved through the accomplishment of all feedback loops and the effective use of the results obtained through quality evaluation mechanisms.

The expert group concluded that the criteria of quality assurance are fulfilled.

### **3.4 Summary:**

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 “Molecular Biology and Genetics” offered at the Eastern Mediterranean University fulfills, for the most part, the above described criteria. They emphasize that the program reveals a great potential to educate and train future non-clinical geneticists, biologists in medical diagnostics, laboratory engineers etc. It also offers the graduates opportunities for further academic career as well as enabling them to work as science and biology teachers at schools.

The program complies with the general regulations of the University. It adheres to the internal standards of the Eastern Mediterranean University and it meets the criteria set by the Turkish Higher Education Council (YÖK). For the purpose of the accreditation, the program curriculum was adapted to the ECTS credit point system, which the experts recognize as a clear sign that the Department of Biological Sciences wants to align with the European standards of higher education.

The experts give a particularly high appraisal of the core group of instructors responsible for the organization and teaching of the program. They show great dedication and effort to the success of the study process and create a very productive and welcoming atmosphere of the Department. The program courses are carried out by internationally trained specialists in very well equipped and organized seminar and laboratory classes. Students receive sufficient academic support throughout their studies.

The program hosts a remarkable number of international students. The Department ensures equal opportunities and treatment of all of its students. Performance evaluations of both students and instructors are carried out at the end of each semester. The department actively contributed to the general quality assurance system of the University by involving both students and teachers in the quality evaluation measures.

Taking these facts into consideration, the experts come to the conclusion that they will submit a recommendation to the Accreditation Commission of the AHPGS for a positive decision regarding the accreditation of the study program.

However, the experts recognize the fact that from the perspective of European standards for higher education programs, "Molecular Biology and Genetics" needs some modifications in its methods of assessment with the subsequent and constant application of the ECTS CP, verify appropriateness of students' workload, create transparency of admission requirements as well as the transparency of recognition of earlier studies.

Based on these observations, the experts recommend the accreditation of the study program on the following conditions:

1. ECTS CP system of evaluation has to be applied in the program in a consistent manner.
  - a. Information about ECTS CP must be continuously presented in program-related documentation, particularly in curriculum and course descriptions.
  - b. The program has to develop a system of correlation between the ECTS and EMU evaluation methods.
  - c. All course descriptions have to contain information about learning outcomes linked to the allocation of a certain amount of ECTS CP.



2. Admission requirements of the program must be presented and applied in a transparent manner.
  - a. The program has to specify the admission requirements to the minimum high-school average grade and the level of performance in certain subjects
  - b. The program has to determine the English language tests and the amount of scores recognized as appropriate for admittance.
3. The program has to demonstrate that it complies with the requirements of Lisbon Convention.

Apart from the above described conditions for accreditation, the experts have outlined the following list of recommendations for the continuous development of the program:

- The experts strongly encourage the program management to introduce exchange opportunities for students and teaching instructors.
- The program curriculum should include a module/course for writing a final thesis in order to ensure that its graduates receive enough training to perform a research-based academic work.
- Study process, learning outcomes and laboratory assignments of interdisciplinary courses offered in collaboration with other departments should be revised in order to ensure that these courses lead to the acquisition of competences relevant to the program objectives.
- Module structure and distribution of workload should be reconsidered in the program. This could be done through:
  - a. introduction of more elective courses on general competences with pass/fail grading,
  - b. awarding students with credits for taking part in extracurricular activities, e.g. in the "Genetics club",
  - c. offering some of the elective and interdisciplinary courses with a pass/fail grading,
  - d. further refinement of the statistical data on the amount of hours students need for independent learning.

- The teaching load of the program is quite high for instructors and professors, therefore the number of the teaching staff should be increased.
- Quality assurance should be based on the principle of transparency and objectivity. Results of students' evaluation should be communicated to all stakeholders, including students themselves.
- Cooperation of various units of the university taking part in the quality assurance procedures should be improved through the definition of concrete responsibilities and actions.
- The program should develop an alumni network starting with summer 2015, in order to verify and adapt the outcomes of the program according to the current requirements of the labor market as well as the careers of the alumni students.

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

##### **Eastern Mediterranean University, Famagusta, Northern Cyprus,**

The accreditation decision is based on the accreditation criteria developed by the AHPGS. These accreditation criteria are in compliance with the existing criteria and requirements valid in the Federal Republic of Germany as well as with 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 resolution of the Accreditation Commission is based on the University's application, the Expert Report and the results of the on-site visit carried out by the experts on 9 January 2015.

Furthermore, on 8 April 2015, the University has submitted its response opinion, as well as a plan of actions, regarding the Expert Report. The Accreditation Commission took into consideration the University's response opinion.

In the response opinion, the University points out that it will carry out the following actions:

- analyze the current course curriculum within the period of September – October 2015. The goal of the analysis is to provide proper communication of ECTS credits in the program-related documents, re-assessment of learning objectives of the courses, and re-assignment of the core and the elective modules within the curriculum;
- present the information about admission requirements regarding English language competences and the high school average grade, on its website as well as in the University catalogues;
- bring the subject of qualification recognition according to Lisbon Convention to the attention of the University Senate.

The Accreditation Commission welcomes the plans of the University.

The Accreditation Commission adopts the following resolution:

The study program "Molecular Biology and Genetics" is accredited. The program is offered since the winter semester 2011 / 2012 and comprises 240 credit points (CP) according to the ECTS (European Credit Transfer System). The regu-

lar study period in the program is 4 years or 8 semesters. Upon the completion of the program, students are awarded with the title "Bachelor of Science (B.S.)".

The accreditation granted by the Accreditation Commission of the AHPGS is valid for a period of five years and ends on the 30 September 2020.

The Accreditation Commission outlines the following three conditions:

1. The program must apply the ECTS and communicate the relevant information in a consistent and transparent manner.
2. The admission requirements of the program must be clearly determined and made publicly available.
3. The program must demonstrate that it complies with the requirements of Lisbon Convention.

The study program "Molecular Biology and Genetics" must provide evidence that it fulfills the conditions of the accreditation decision by 7 February 2016.

According to accreditation standards, in case of non-fulfillment of the conditions the accreditation of the study program will be revoked.

For further development and enhancement of the study program, as well as the University as a whole, the AHPGS Accreditation Commission recommends the responsible units to take into consideration the program-specific and the overarching recommendations listed in the summary of the Expert Report.