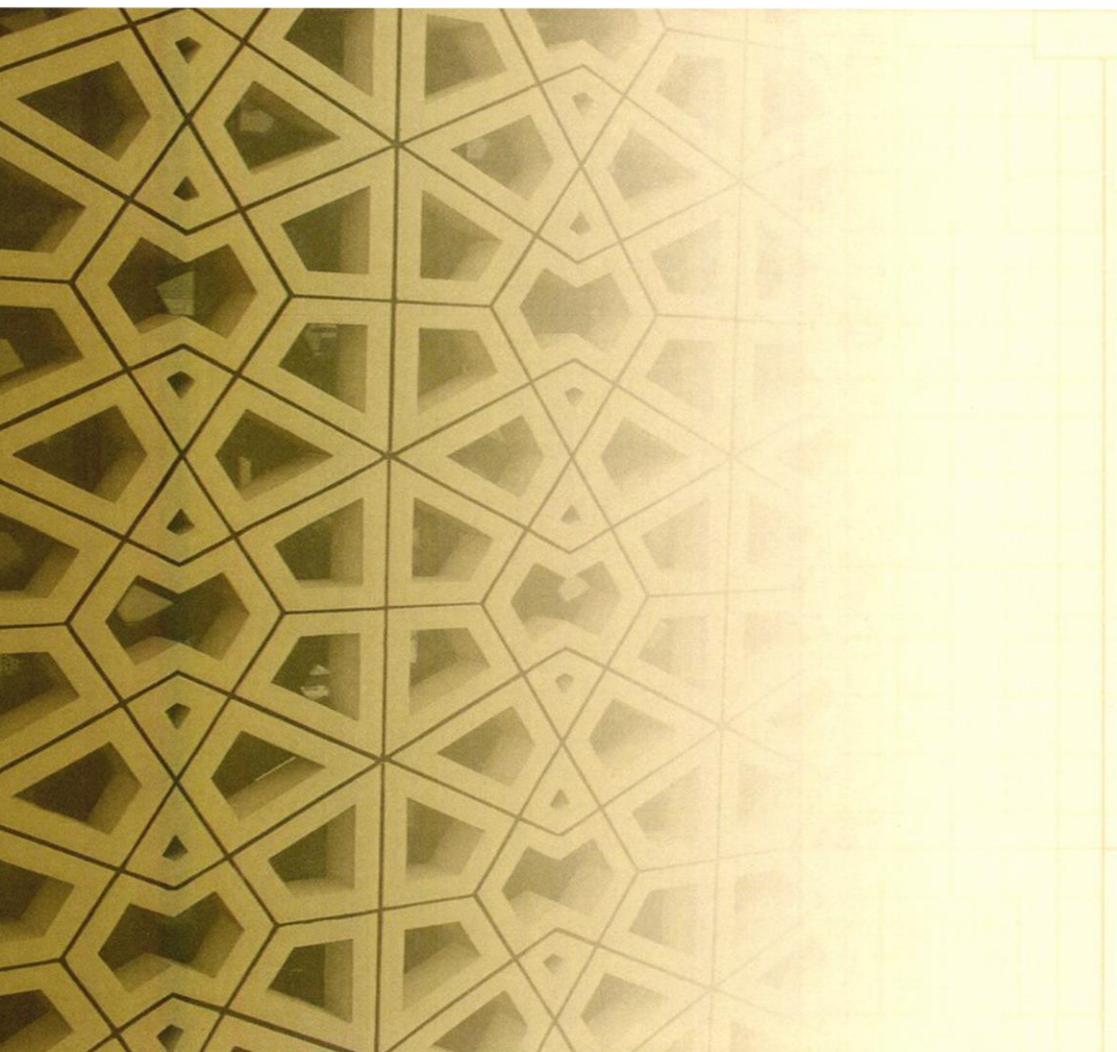


Self-Assessment Report for International Accreditation

Bachelor's degree program in

Physics



Department of Physics

قسم الفيزياء



Umm Al-Qura University, 2017



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Preface

Umm Al-Qura University (UQU) is one of the most effective governmental institutes concerns with teaching and scientific research in Kingdom of Saudi Arabia (KSA). The site responsible for execution of the Degree Program in Physics is the Physics Department. The Physics Department belongs to the Faculty of Applied Science in University of Umm Al-Qura. The faculty brings together all the basic natural sciences concerning teaching and scientific research. Faculty of Applied Science coordinates seven program degrees; Mathematics, Physics, Medical Physics, Chemistry, Industrial Chemistry, Biology and Microbiology. The campus belongs to the institute is divided onto three main locations as; El-Abedyah for boys and El-Zaher, Elaziziah for girls. The Physics programs are displayed in El-Abedyah for boys and El-Zaher for girls.



Acknowledgement

We express our deep thanks to **Dr. Ameenah N. Al Ahmadi** for her great efforts and successful management. Our deep thanks are extended to all of the members of Physics Department, especially members of Quality Assurance and Academic Accreditation Committee and all those who have helped in preparing this report and provided us with information and support from the University of Administration, the Deanship of Academic Development and Quality and the College of Applied Sciences.

Head of Physics Department

Saleh M. Alluqmani



0. Formal Specification

| | |
|---|--|
| Name of the program (original language) | بكالوريوس علوم في الفيزياء |
| Name of the program (English translation) | Bachelor of Science (B.Sc.) in Physics |
| Final degree | Bachelor of Science |
| Standard period of study | 4 years (8 semesters) |
| Credit points (according to ECTS) | 240 credit points |
| Type (several can be indicated) | Full time |
| Website of the Higher Education Institution | http://uqu.edu.sa/ |
| program start date within the academic year (first time) | 21/12/1401 H (19/10/1981 AD) |
| Intake rhythm | Fall semester |
| Expected intake number of students in Physics Department | 200 students |
| Amount and type of fees/charges | Free of charge |
| For the AC-Seal (Germany):classification as consecutive/further education (for Master's degree programs) | Consecutive / further education / N. A. |
| For the AC-Seal (Germany): (optionally only for Master's degree programs) | application/research orientation/ N. A. |
| Faculty/Department | Faculty of Applied Sciences/ Physics Department |
| Official contact person for publication on the web | Dr. Salah Aluqmani and Dr. Zineb Matar |
| Telephone | +966555093143; +966567552268 |
| E-Mail | smluqmani@uqu.edu.sa zsmatar@uqu.edu.sa |
| Fax | +966125563558 |
| Mail | KSA, Makkah – 21955, Faculty of Applied Sciences, P.O. Box: 715 |
| Re-accreditation | No |
| Last accreditation issued by | No |
| Duration of the last accreditation | ----- |

0.1. Type of Study

A full time study is conducted over five days/week (Sunday-Thursday) from 08:00 to 22:00 (for male) and 08.00 to 18.00 (for female). Courses conduct for two or three semesters per year, including the summer semester which offered as intensive courses. Most of physics courses offered by the department are concentrated in first and second semesters. The summer courses are offered only for special cases. The mandatory attendance for students is 75% at least, for each course in the program. Variable teaching methodology are applicable as using traditional classes, smart classes as well as e-learning which help in self-study and also distance education. All the outlines and details belong to the courses in programs are displayed in department guide ([Appendix PHYS01](#)).

0.2. Final Degree of the Physics Program

The Statute of the Council of Higher Education and Universities (Saudi Universities Act) governs the education in Umm Al-Qura University ([Appendix UQU01](#)). The awarded degree is Bachelor of Science in Physics / Faculty of Applied Science / Umm Al-Qura University. The Saudi Universities Act ([Appendix UQU01](#)) and the Government Decree on University Degrees at 21/12/1401 H (19/10/1981 AD) ([Appendix UQU02](#)) grant the right to award this degree to Umm Al-Qura University.

0.3. Standard Period of Study and Credit Points Gained

The system of Higher Education Saudi requires at least 120 credit hours for Bachelor's degree (equivalent to 212 ECTS credit points). The university regulates the education to enable the student to complete his degree in four years of full-time study ([Appendix UQU01](#)). In Umm Al-Qura University, the

extent of studies required for Physics Bachelor degree is 142 credit hours according to Saudi system (equivalent to 240 ECTS credit points).

0.4. Expected Intake for the Program

Several separate variants affect the entrance of students to B. Sc. degree program in Physics Department, Faculty of Applied Science, Umm Al-Qura University. The number of the expected intake through joint application is determined between the faculty and university higher management on yearly basis. Department council makes a proposal to the rector on the student intake for physics programs. The expected and actual intakes of students in physics department (in last four years) are listed in Table 0-1. The Bachelor's degree program in physics includes applicants who have succeeded in specific competitions in the fields of natural sciences.

Table 0-1: Expected and actual intakes of students in physics department

| Year | Expected intakes | | | Actual intakes |
|--------------------|------------------|-------|-------|----------------|
| | Boys | Girls | Total | Total |
| 1434/1435 H | 100 | 120 | 220 | 48 |
| 1435/1436 H | 100 | 140 | 240 | 99 |
| 1436/1437 H | 100 | 130 | 230 | 100 |
| 1437/1438 H | 100 | 100 | 200 | 234 |
| 1438/1439 H | 100 | 100 | 200 | 182 |



0.5. Program Start Date Within the Academic Year and First Time the Program is Offered

At Umm Al-Qura University, the academic year of the university nearly starts on mid-August and ends on mid-June. The year is divided into three semesters; autumn semester, spring semester and summer semester. Physics degree program is commenced once a year at the beginning of autumn semester at the beginning of each academic year. The courses being offered are coordinated to ensure this. Education directed to Physics program has been offered since the Faculty of Science was founded in 21/12/1401 H (30/10/1981 AD) ([Appendix UQU02](#)).

Exactly after the visit of the ASIIN team to our faculty in a workshop we decided to improve our study plan to include all course taught in English language. Thus we started in 2012 (plan 33) a first improved of our present plan of study including the consideration of a preparatory year before starting the physics courses. However after time we found that the plan is not suitable for our student due to some administration reasons. One year ago, we started our second improved for the (plan 37) of study which also includes all courses to be taught in English without a preparatory year.

0.6. Amount and type of charges

At Umm Al-Qura University, the students should register for courses each semester. The educational institute offers a university degree with free charge. Also, the entry exams belong to student admission is free of charge ([Appendix UQU01](#)).



0.7 Appendices:

Umm Al-Qura University

[UQU01: The Statute of the Council of Higher Education and Universities \(University Act\).](#)

[UQU02: Government Decree on Umm Al-Qura University and Faculty of Applied Science.](#)

Physics Program

[PHYS01: Department Guide.](#)



1. Degree Program: Content, Concept and Implementation

1.1 Mission Statement

The existence of Umm Al-Qura University (UQU) in the Holy City of Makkah gives it a distinguished character as an academic institution that serves Islam. It contributes to the development of human resources and the provision of services at the levels of both the public and private sectors in the light of the requirements of the comprehensive development plans of the country. The major objectives of the University include:

- Provision of higher education and graduate studies to enable citizens to contribute to the development of their country in the light of Islamic principles in the following fields:
 - Islamic studies
 - Natural and applied sciences
 - Humanities, social sciences and languages
- Contribution to enhancement of scientific research by conducting and encouraging research and establishing research centers.
- Preparation of qualified scientists and teachers.
- Providing other Islamic societies in the specialized education of their citizens in the different fields of knowledge.

1.1.1 UQU Mission:

The University of Umm Al-Qura, with what it has from qualified human resources, advanced infrastructure, scientific programs, research priorities, and managerial and financial systems, will become:

- 1- Trusted by the community and its first choice.
- 2- A world authority in accreditation for Islamic studies (Sharia) and Arabic Language.

- 3- House of expertise and the official reference in the issue of developing the environment of Makkah and the holy places.
- 4- An environment that facilitates innovation in knowledge and science, according to the established world criteria. ([Appendix UQU03](#), [04](#), [05](#), and [06](#)).

1.1.2 UQU Values

- 1- Adhering to the Islamic approach
- 2- Human and environment development in Makkah.
- 3- Excellence in work, and appreciating the achievement.
- 4- Team spirit in work.
- 5- Establishing an excellent education environment.
- 6- Developing skills and capabilities, and supporting the talented people.
- 7- Adopting the principle of continuous education.
- 8- Cooperation, communicating, and partnerships with national, regional and international organisations.

UQU Vision and Goals

Vision:

Pioneering in education, scientific research and the service of the local and global society.

Goals:

- World leadership in Islamic science (Sharia) and Arabic Language.
- To become the number one University in humanities, social and environmental studies related to Hajj and Umra.
- To be among the first ten universities in the Arab world



1.1.3 Faculty of Applied Science Vision

- Raise the educational level of the students to achieve high specific quality.
- The development of student's research capacity and take advantage of modern technological developments.
- Spread the mutual cooperation between Faculty members within the Faculty and the establishment of scientific lectures and seminars.

1.1.4 Faculty of Applied Science Mission

Accomplishment of objectives higher education, providing University education and graduate for Faculty students with development of scientific, practical and interpersonal skills inside and outside the Faculty. Encouraging the Faculty members to scientific research, and to participation in community service, and expansion in the areas of translation and authoring scientific books ([Appendix PHYS02](#)).

Faculty of Applied Science Goals

- International experience and developments in the field of scientific and technical knowledge and requirements of the labor.
- Support for University education outputs to the education sector health and the industrial and commercial sector and scientific competencies of Faculty students aligned with the development plans.
- Linking disciplines, departments staffed need the labor market through joint cooperation between the departments of the Faculty and the private and public sector through joint workshops to develop a cooperation mechanism.



- The development of qualified human resources for the teaching profession, Faculty of Applied Science and provide the community with specialists in various Science, both at the level of diploma or bachelor.
- Cooperation with the faculties of Applied Science in the local and international universities.
- The development of behavioral trends (interpersonal skills) of the Faculty students.
- Calendar comprehensive training programs in the light of international experience in the field of scientific and developments the results of the labor market ([Appendix PHYS03](#)).

1.1.5 Physics Department Vision

Achieving pioneering in physics and medical physics at a local and international level, and creating active partnerships with community organizations.

1.1.6 Physics Department Mission

Realizing creativity and distinction in higher education and scientific research in the fields of physics and medical physics. The mission is to prepare graduates with high scientific and technical skills who are capable of serving and developing the community. A program handbook is available for students ([Appendix PHYS04](#)).

1.1.7 Program Educational Objectives (PEOs)

The Physics department has defined a set of PEOs that translate its mission into defined tasks. The PEOs of physics are defined as follows:

Program Educational Objective 1 (PEO1):

Educate students with a broad understanding of fundamental and applied physics both theoretical and experimental.

Program Educational Objective 2 (PEO2):

Develop the necessary skills for critical thinking, problem solving and scientific communication.

Program Educational Objective 3 (PEO 3):

Prepare students who are able to function well in graduate school, in international and national organizations.

Program Educational Objective 4 (PEO 4):

A recognition of professional and societal responsibilities, and the impact of Physics Profession on the society.

The program educational objectives are consistent with the Faculty mission and in line with UQU mission as well. Table 1-1 shows a mapping between the Institution's missions and the PEOs.

Table 1-1: Mapping of PEOs to the missions of Institution

| | UQU mission | Faculty mission | Program mission |
|------|-------------|-----------------|-----------------|
| PEO1 | | | ✓ |
| PEO2 | | ✓ | ✓ |
| PEO3 | ✓ | ✓ | ✓ |
| PEO4 | ✓ | ✓ | ✓ |

1.2. Program Learning Outcomes (PLOs)

Physics program learning outcomes (PLOs) are designed according to the National Qualification Framework (NQF) ([Appendix UQU07](#)) which provides five learning domains; Knowledge, Cognitive Skills, Interpersonal Skills and Responsibility, Communication, Information Technology, Numerical, and Psychomotor.

On the table 1-2 below there are eighteen learning outcomes classified into the five NQF learning domains. ([Appendix UQU07](#)), numbered in the next left column to them. Each program learning outcome is verified by using appropriate assessment method, and supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes.

After the completion of the Bachelor's Degree Program in Physics, program learning outcomes require that our graduate will demonstrate the following outcomes.

Table 1-2: The program learning outcomes according to the NCAAA domains.

| Program Learning Outcomes require that our graduate will | | |
|--|----|---|
| Knowledge | a1 | Understand relevant of knowledge and theory in other related disciplines and professional fields |
| | a2 | Recognize facts, principles and concepts of classical physics (mechanics, electrodynamics, thermodynamics, vibrations, waves and optics) and are familiar with the fundamentals of quantum, atomic, nuclear, and solid state physics. |
| | a3 | Describe concepts, Procedures of matching the principles and the concepts to analyze problems within specific core areas and theories. |

| | | |
|---|----|---|
| Cognitive Skills | b1 | Apply skills when asked (discuss how to overcome educational problems) |
| | b2 | Gain mental calculating skills by training them on it |
| | b3 | Solve problems in Physics by using suitable mathematical principles |
| | b4 | Analyze and interpret quantitative results |
| | b5 | Gain the skills of solving scientific problems related to industrial problems |
| Interpersonal Skills & Responsibility | c1 | Show responsibility for self-learning to be aware with recent developments in physics |
| | c2 | Work effectively in groups and exercise leadership when appropriate. |
| | c3 | Act as professional and responsible person. |
| | c4 | Recognize life-long learning is a necessity as well as a responsibility of every graduate |
| Communication, Information Technology, Numerical | d1 | Communicate effectively in oral and written form |
| | d2 | Collect and classify the material for a course |
| | d3 | Use basic physics terminology in English |
| | d4 | Acquire the skills to use the internet communicates tools. |
| Psycho-motor | e1 | Use a perfect experimental tools to solve Physics problems in the Labs |
| | e2 | Employ software skills. |

Program learning outcomes were established by a process that involved extensive discussions with Faculty members, students, Alumni, and

accreditation Committee. The program learning outcomes support the program educational objectives ([Appendix PHYS04](#)).

The learning outcomes of the B.Sc. Program in Physics have been examined according to the ASIIN specific criteria ([Appendix PHYS05](#)). An overview of the B.Sc. Program in Physics is compiled for curriculum analysis.

1.3. Learning Outcomes of the Courses

Each course has a set of outcomes called Course Learning Outcomes (CLOs). The CLOs of a course describe the abilities to be attained at the end of the course. The CLOs for each course are specified so that they are non-overlapping and are as few as possible still covering the specified syllabus of the course. The curriculum committee is responsible for updating and revising the CLOs based on the recommendations of the course coordinators. Learning outcomes of each course are available in course handbook ([Appendix PHYS04](#)). For each course, the CLOs are linked to the PLOs that are attained as a result of attaining the CLOs.

UQU uses credit hour (CR) system. The number of credit hours required for the qualification must be as specified in ([Appendix UQU07](#)).

The credit hour formula is based on a numbering system in which a full time student load is 15 to 18 credit hours in a semester and a minimum of 120 credit hours in a four-year degree. One academic year normally represents at least 28 weeks of classes, exclusive of final examinations. The Bachelor's Degree of Physics program requires a total of 142 CR (four years of full-time study). Each CH at UQU is equivalent to 1.69 ECTS credits. Thus a student who completes four years or 142 CR at physics program (PP) will have earned 240 ECTS credits. The requirement of 142 credit hours is distributed amongst various

subjects and components and their corresponding points according to European Credit Transfer and Accumulation System (ECTS) as shown in Table 1–3 and table 1-4, respectively ([Appendix PHYS06](#)).

Table 1-3: distribution of 142 CR

| Education Categories | Total of Credit hours | Percentage of Credit hours % | ECTS |
|----------------------|-----------------------|------------------------------|------|
| English Skills | 8 | 5.633 | 14 |
| Computer Skills | 2 | 1.410 | 3 |
| Mathematics Science | 12 | 8.451 | 20 |
| General Education | 29 | 20.423 | 49 |
| Physics Course | 86 | 60.563 | 146 |
| Bachelor's Project | 5 | 3.521 | 8 |
| Total | 142 | 100% | 240 |

Table 1-4: The compulsory course

| Requisite | Total of Credit hours | Percentage of Credit hours % | ECTS |
|--------------------|-----------------------|------------------------------|------|
| University | 21 | 20.42 | 49 |
| Faculty | 28 | 14.10 | 34 |
| Department | 88 | 61.96 | 149 |
| Bachelor's Project | 5 | 3.52 | 8 |
| Total hours | 142 | 100% | 240 |

1.4. Job Market Perspectives and Practical Relevance

Students graduating from the physics program applies to regulations education of the KSA Universities are defined by the Ministry of Education ([Appendix UQU08](#), and [09](#)).



The Board of Umm Al-Qura University decides the total number of new applicants. The contents of the degree program are decided by University (<https://uqu.edu.sa/admission-en>). The content of the Bachelor's Degree Program in Physics is determined on the basis of the general requirements concerning the education of Physics, and the needs and expectations of the job market ([Appendix PHYS07](#), and [08](#)).

The graduate students from physics program are highly demanded recently in the University and institution research center, company and schools in KSA ([Appendix UQU01](#)).

The administrator of physics program will continue inviting many professor and engineering to give lectures for our students to explain the new jobs related to the physics program and broaden working opportunities and to know more about the future work even during their undergraduate period. The students work in a research faculty laboratories and under their supervision during the preparation of graduation project, which give them a lot of skills in the setup of practical experiments, sample preparation and measurement of optical, electrical and magnetic properties, which qualifies them to work in the industrial and technological sectors ([Appendix PHYS09](#), [PHYS11](#)).

According to the employment data in recent years, graduates participate work in the institute, the state owned enterprises or private enterprises and some of them choose to continue their higher education. They are mainly engaged in research development. In addition, the graduate can join Faculty of education to study of one year to be prepare as Teachers. After graduation they can work physics learning in public and private school. The occupational profile for the physics graduates is shown in Table 1-5

Table 1-5: Physics Graduates Occupational Profile

| M | Occupational Profile |
|---|--|
| 1 | Continue higher educations in physics, leading to MSc. and PhD. degrees |
| 2 | Work in research centers and universities. |
| 3 | Work in public and private sectors school for education of physics courses |
| 4 | <p>Work as a machine operator and/or a data analyst in one of the following industrial regions: Quality control labs., Electric power stations, and water stations.</p> <p>Standards and measurements bureau Petroleum ministry. Manufactures of plastics, steel, textile, glass, ceramics, rubber, electronics, semiconductors and solar cells, ...etc.</p> |

The number of employees within the Physics field will increase during the next decade due to the increasing information revaluations require new knowledge and skills in the companies within the application field ([Appendix PHYS07](#), and [08](#)). In the Bachelor's degree, most assignments can be included applications from the life. This assignment has a more general purpose. After completing the courses, the student will able to define and explain, what it is like to be working as an employee, and what are the basic rules in working life from the view of an employee.

1.5. Admissions and Entry Requirements

Entry Requirements for Bachelor's Degrees

The students admitted to Umm Al-Qura University under the The Statue of the Higher Educations and Universities ([Appendix UQU09](#), and [10](#)) and rules of Study and Examinations of Higher Education at Umm Al-Qura University. Umm Al-Qura University Council designate the number of students to be admitted every year based on suggestions from the Faculty councils and related departments.

An applicant for admission to an undergraduate program at Umm Al-Qura University (UQU) must satisfy the following conditions:

1. Student should have earned the high school certificate, or its equivalent from inside or outside the Kingdom of Saudi Arabia, and majored in natural or technological sciences
2. Student should receive the general secondary certificate during the last five years. The University council may abolish this condition if there are convincing reasons,
3. Student should have taken entrance exam that consists of capabilities, and eligibility exam by the National Center for Assessment in Higher Education.
 - The capabilities exam has two components: Linguistics and Mathematics. The test is aimed at determining the general capabilities of students in the two areas mentioned above.
 - The eligibility exam is a multiple-choice test given in five subjects, i.e., Mathematics, Physics, Chemistry, Biology and English. The objective of this examination is to evaluate the student's knowledge and ability in English and Science.
4. Student must have a record of good conduct.
5. Student must successfully pass any test or interview required by University council.
6. Student must be physically fit and healthy.

7. An employed prospective student should have a written permission from his employer.
8. Student must satisfy any other conditions the University may deem necessary at the time of application.
9. The student must submit the required documents with the University within a specified period.
10. The students dismissed from any other University for disciplinary or academic reasons. If it becomes clear after his admission that he has been previously dismissed from another University, his acceptance shall be deemed cancelled from the day of his admission.
11. Student may be dismissed from the University for Academic reasons enrolled in some programs that do not award a Bachelor's Degree, the University Council can decide, or whatever delegates. This may not be complete the program.
12. Neither the student dismissed from the University for those who had already earned a Bachelor's Degree or its equivalent for other Bachelor's Degree. University Rector has the right to exceptions.
13. A registered student in another University degree or less, shall not accept, either in the same University or another.

For students who fulfill all the above conditions the admission will be awarded as per their marks in high school certificate (50%), the capabilities (30%) and eligibility (20%) exam. A merit list is generated based upon the total score obtained by the students. Students are offered admissions in a Faculty of their choice in the order of the merit list subject to the availability of seats. Once seats are exhausted in a particular Faculty, the admission in that Faculty is closed and remaining students have to make their choices from the remaining Faculty.

The undergraduate curriculum in physics program provide academic content taught in a specific course. Depending on the related field, curriculum usually indicate the knowledge, cognitive skills interpersonal skills and responsibility and communication, information technology, numerical which includes the learning standards or learning objectives and the assignments and projects given to students that agree with the National Calcification Framework (PP4). Graduates from physics program are professional to work on University, research center, Atomic Energy Commission, engineering and applied physics, and school after they study one year educational materials, Faculty of education. Curriculum offers students the opportunity to acquire a deep conceptual understanding of fundamental physics.

The quality of the program are continuously development and the aim departmental requirements begin this process. The quality of the process is evaluated by examining the curriculum committee to increase excellence program the developed some essential features:

- 1- The method of teaching physics discover the learning efficiency and effectiveness takes place during explanation and discussion.
- 2- Interaction between the staff of physics and the students. They can be able to expose their minds and find difficult in physics. At this time the staff reduce the difficulties of the student
- 3- Each lecture should have target and specific objectives that necessary and important of the students in cognitive and affective and each knowledge gained should be applicable to any physical challenges.
- 4- Evaluation based on the recalling of facts and affective so that the students could be developed on the demands.



5- Emphasis is placed on the theoretical and practical aspect of the subject. This is suggested and recommended so that any theory taught in physics could be tested and trusted to be consistent at any considerable situations.

1.6 Curriculum/Content

The target of the curriculum development process is the production of a good curriculum in terms of both content and communication. The curriculum lays the foundation for teaching and planning (individual study plans) and the implementation of the study plan ([Appendix PHYS04](#)).

The vice-rector for education and the Heads of the degree programs are responsible for the curriculum work. The curriculum work ensures the delivery of high-quality qualifications: the expertise and knowledge obtained from the studies would be based on current and key research-based knowledge in the field of science in question and on the development of competencies and skills as a part of the degree. The curriculum work takes into account the expertise required in the increasingly diverse and globalized world of work and in the perspective of lifelong learning. Degree programs collaborate in curriculum work in order to secure synergy benefits as extensively as possible.

At the end of each semesters curriculum committee in the program carefully study and precisely review the courses reports with their pre-set specifications and prepare a comprehensive report .This report include contents of each courses ,the topics that have not been taught and the reasons for this , difficulties and problems encountered during teaching various courses and the recommended corrective and action plan for future improvement .This report finally submitted to the department and faculty administrative board to review it

, take a corrective measures and set up the appropriate plans and mechanisms to overcome these problems and difficulties in the following academic years.

Students are fully informed about courses requirements in advance through course specifications and the academic guide booklet distributed for students or at the website of the physics department at the beginning of each semester. These courses specifications contain a full description of the requirements of courses, knowledge & skills to be developed, intended learning outcomes and, work requirements and assessment processes.

Attendance of department staff (new and continuing staff) in training courses on how to formulate learning outcomes and teaching & assessment strategies most appropriate for their achievement. For example the university teacher preparation training course that was organized by deanship of university development and quality.

Table 1-6: Curriculum study plan (19 Edition) of the physics program

| Year | Course Code | Course Title | Required or Elective | Credit Hours | College or Department |
|---------------------------------------|-------------|-----------------------------------|----------------------|--------------|--|
| 1st Year Semester 1 | | | | | |
| | 403101 | GENERAL PHYSICS 1 | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 402101 | GENERAL CHEMISTRY 1 | R | 4 | Faculty of Applied Science / Dept of Chemistry |
| | 404101 | DIFFERENTIATION AND INTEGRATION 1 | R | 4 | Faculty of Applied Science / Dept of Mathematics |
| | 705101 | ENGLISH LANGUAGE | R | 4 | English Language Institute |

| | | | | | |
|---------------------------------------|--------|-----------------------------------|---|---|--|
| | 601101 | ISLAMIC CULTURE 1 | R | 2 | Faculty of Sharia' |
| | 605101 | QURAN 1 | R | 2 | Faculty of Arabic Language |
| 1st Year Semester 2 | | | | | |
| | 403102 | GENERAL PHYSICS 2 | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 403121 | ELECTRICITY AND MAGNETISM | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 404102 | DIFFERENTIATION AND INTEGRATION 2 | R | 4 | Faculty of Applied Science / Dept of Mathematics |
| | 404140 | ALGEBRA FUNDAMENTAL | R | 4 | Faculty of Applied Science / Dept of Mathematics |
| | 401101 | GENERAL BIOLOGY PLANT | R | 2 | Faculty of Applied Science / Dept of Biology |
| | 401102 | GENERAL BIOLOGY ANIMAL | R | 2 | Faculty of Applied Science / Dept of Biology |
| 2nd Year Semester 1 | | | | | |
| | 403212 | HEAT AND THERMODYNAMIC | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403231 | OPTICS | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 403240 | THEORETICAL PHYSICS 1 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403241 | CLASSICAL MECHANICS 1 | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 403285 | MEASUREMENTS | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 501101 | ARABIC LANGUAGE | R | 2 | Faculty of Arabic Language |
| 2nd Year Semester 2 | | | | | |

| | | | | | |
|---------------------------------------|----------|----------------------------|---|---|--|
| | 403213 | STATISTICAL THERMODYNAMIC | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403242 | THEORETICAL PHYSICS 2 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403245 | CLASSICAL MECHANICS 2 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403253 | ATOMIC PHYSICS | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 705102 | COMMUNICATION IN ENGLISH 1 | R | 3 | English Language Institute |
| | 601201 | ISLAMIC CULTURE 2 | R | 2 | Faculty of Sharia' |
| 3rd Year Semester 1 | | | | | |
| | 403332 | Electromagnetism 1 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403344 | Quantum Mechanics 1 | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 403346 | Theoretical Physics 3 | R | 2 | Faculty of Applied Science / Dept of Physics |
| | 403371 | Solid Stat 1 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 601301 | Islamic Culture 3 | R | 3 | Faculty of Sharia' |
| | 605201 | Quran 2 | R | 2 | Faculty of Arabic Language |
| 3rd Year Semester 2 | | | | | |
| | 403342-3 | Electromagnetism 2 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403345 | Quantum Mechanics 2 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403361 | Nuclear Physics 1 | R | 4 | Faculty of Applied Science / Dept of |

| | | | | | |
|---------------------------------------|--------|----------------------------|---|---|--|
| | | | | | Physics |
| | 403382 | Workshop | R | 2 | Faculty of Applied Science / Dept of Physics |
| | 403383 | Computer | R | 2 | Faculty of Applied Science / Dept of Physics |
| | 705103 | Communication in English 2 | R | 3 | English Language Institute |
| | 601401 | Islamic Culture 4 | R | 2 | Faculty of Sharia' |
| 4th Year Semester 1 | | | | | |
| | 403423 | Electronics | R | 4 | Faculty of Applied Science / Dept of Physics |
| | 403432 | Advanced Optics | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403462 | Radiation Physics | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403471 | Semiconductor | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403493 | Project | R | 5 | Faculty of Applied Science / Dept of Physics |
| | 605301 | Quran 3 | R | 2 | Faculty of Sharia' |
| | 102101 | Alsera Alnabaweia | R | 2 | Faculty of Sharia' |
| 4th Year Semester 2 | | | | | |
| | 403461 | Nuclear Physics 2 | R | 3 | Faculty of Applied Science / Dept of Physics |
| | 403463 | Nuclear Technology | R | 2 | Faculty of Applied Science / Dept of Physics |
| | 403372 | Solid State 2 | R | 2 | Faculty of Applied Science / Dept of Physics |
| | 605401 | Quran 4 | R | 2 | Faculty of Sharia' |

The objectives of degree programs and courses are defined as learning outcomes. The learning outcomes courses are based on the mission of a given degree program. Descriptions regarding instruction (e.g. learning outcomes and number of ECTS credits) must follow the regulations and are required to be realistic ([\(Appendix PHYS04\)](#), and [07](#)).

The quality of the process is evaluated by examining the curriculum and the degree program development. The quality indicators for the curriculum process are: continuous development and professional relevance of curricula and degree structures, true-to-life course descriptions that follow guidelines and the publication of the study guide on schedule. Changes to study guide are handled by the faculty councils.

1.7 Appendices:

Umm Al-Qura University

[UQU03: Admission Guide in Umm Al Qura University for the Academic Year 1437 / 1436 H](#)

[UQU04: Rules of Study and Examinations of Higher Education in Umm Al-Qura University](#)

[UQU05: Right and Duties of the Student Regulations for Students in Umm Al-Qura University](#)

[UQU06: Strategic plan in Umm Al-Qura University](#)

[UQU07: National Qualification Framework \(NQF\)](#)

[UQU08: Quality Guide for Studying and Learning](#)

[UQU09: Enrollment Registration Deanship Guide](#)

[UQU10: Quality Guide for Studying and Learning](#)

Physics Program

[PHYS02: Consistency between University & College Missions](#)

[PHYS03: Consistency of Collage and Department Missions](#)

[PHYS04: Program Handbook Plan 19](#)

[PHYS05: Consistency between LOPs Learning Outcomes of Physics](#)



[Program and ASIIN Requirements](#)

[PHYS06: The European Credit Transfer Accumulation System ECTS](#)

[PHYS07: Program Specification](#)

[PHYS08: Study Plan 19](#)

[PHYS09: Attendance Certificate](#)



2. Degree Program: Structures, Methods and Implementation

2.1: Structure and Modularity

The degree program in Physics leads to the degree of Bachelor of Science in Physics ([Appendix: PHYS10](#)). It comprises eight levels and its standard duration is four years. The program starts with general studies which include for instance mathematics, physics, biology, foreign language and Islamic culture.

All students in the physics program take a total amount of studies of 142 Credit hours (= 240 ECTS; "European Credit Transfer System") credit points. Studies in other domestic or foreign higher education institutions can be included in the program after accepted by department ([Appendix PHYS06](#)).

The physics program is available as a one program in itself. It comprises theoretical courses, exercises sessions, laboratory work and Bachelor's Project. The degree courses are divided into;

- ☞ University requirements
- ☞ Faculty requirements
- ☞ Department requirements

The percentages of various requirements are summarized in the following table

Table 2-1: Percentage of Courses in the degree Program

| Requirement | Type | CR | ECST | Percentage |
|-------------|------------|-----|------|------------|
| University | Compulsory | 21 | 36 | 14% |
| Faculty | Compulsory | 28 | 47 | 20% |
| Department | Compulsory | 88 | 149 | 62% |
| Bachelor's | | 5 | 8 | 4% |
| Total | | 142 | 240 | 100% |



2.2 Workload and Credit Points

A total average of 36 C.R (=60 ECTS) credits points are normally earned per academic year in Bachelors program. Credit points are awarded on the basis of passing course examinations. One credit point represents a workload for the student of approximately 44 hours in the form of attendance, self-study, and preparing for and taking examinations. To complete the studies of one academic year requires on average 1680 hours, which corresponds to 36 C.R (=60 ECTS credits points). The overall workload for the student requires on average 1680 hours in an academic year including semester breaks ([Appendix PHYS06](#))

The workload for the Bachelor's degree is presented in Table 2-1 and Table 2-2.

Table 2-2: Workload per semester

| Level (semester) | Credit Hours | Credit Hours (class hours)/week | | Average of Independent Study Hours/Week (Lectures hours x 2 + Labs hours) | Total workload / week (Average of ind...+ Credit hours) | Total workload / semester (15 weeks) | ECTS |
|---------------------|-----------------|---------------------------------------|--------------------------|---|---|---|------|
| | | Lectures | Tutorials and labs | | | | |
| 1 | 18 | 16 | 2 | 34 | 52 | 780 | 30 |
| 2 | 20 | 17 | 3 | 37 | 57 | 855 | 34 |
| 3 | 19 | 17 | 2 | 36 | 55 | 825 | 32 |
| 4 | 18 | 17 | 1 | 35 | 53 | 795 | 30 |
| 5 | 17 | 17 | 0 | 34 | 51 | 765 | 29 |
| 6 | 19 | 18 | 1 | 37 | 56 | 840 | 32 |
| 7 | 22 | 20 | 2 | 42 | 64 | 960 | 37 |
| 8 | 9 | 9 | 0 | 18 | 27 | 405 | 16 |

| Level (semester) | Credit Hours | Credit Hours (class hours)/week | | Average of Independent Study Hours/Week (Lectures hours x 2 + Labs hours) | Total workload / week (Average of ind...+ Credit hours) | Total workload / semester (15 weeks) | ECTS |
|---------------------|-----------------|---------------------------------------|--------------------------|---|---|---|------|
| | | Lectures | Tutorials and labs | | | | |
| Grand total | 142 | | | | 415 | 6225 | 240 |

Table 2-3: Workload per year of Physics Program

| Year | CR.H | ECTS C.P. | 1 st semester | 2 nd semester |
|-----------------|------|-----------|--------------------------|--------------------------|
| 1 st | 38 | 64 | 18 | 20 |
| 2 nd | 37 | 63 | 19 | 18 |
| 3 rd | 36 | 61 | 17 | 19 |
| 4 th | 31 | 52 | 22 | 9 |
| Total | 142 | 240 | 76 | 66 |

2.3 : Educational Methods :

The teaching methods applied in the Degree Program in Physics include the followings:

- ☉ **Lectures** : 50 minutes and often there will be two or three per week per module. Lectures are held in groups between 10 to 30 students, with one lecturer responsible for each module.
- ☉ **Classroom exercises** : are used to explain and discuss the solutions to weekly problem sheets to students.
- ☉ **Workshops** : are sessions in which students work on their own or in groups, with help available on request from a tutor.

- ☛ **Offices hours:** are arranged by the Faculty during their office hours and at these times students may discuss particular problems with Faculty member on an individual basis.
- ☛ **Laboratory work :** in which physics students learn to practice the activities of scientists - asking questions, performing procedures, collecting data, analyzing data, answering questions, and thinking of new questions to explore. Faculty and lab technician are present to guide the work and mark the reports.

Projects : are implemented by all students during last term of their final year. Students are supervised closely by a member of Faculty, often as part of a team of graduate students and research fellows ([Appendix: PHYS11](#)).

Faculty members are available to help and advice students, encourage questions and respond to suggestions. Students are encouraged to work with their colleagues, learning through discovery - something that we consider to be just as important as learning from information.

The courses also involve group work which helps the computer commun skills, active board and learning environments are widely used in the courses. The teaching methods are chosen so that the student has time for self-study. As an average the student has 2 hours of independent study per one contact teaching hour.

2.4: Support and Assistance

Faculty of Applied Sciences offers students, academic, advising activities that cover the entire period of studies and support studies and learning efficiently. This guidance provides assistance to students in achieving educational outcomes and in graduating within the scheduled time.

Department of Physics strives to make prospective and existing students feel welcome, and to provide the most up-to-date information leading those students to success. We have set up an Academic Advising Office. Among the functions of this office we mention the followings:

- ☛ Supervising the implementation of Academic Guidance mechanism.
- ☛ Spreading awareness among students about what the Academic Advising Office and how to benefit from its services, through meetings, newsletters, Web site of the physics department.
- ☛ Distributing students on academic advisors and publishing listings on advertising boards.
- ☛ Heeding to the academic problems of students that rise through the academic advisor and strive to resolve them.

The support and advising are conducted by peer advisors, study coordinators, advising dean, Faculty advisors and teaching assistants.

- ☛ **Academic advisors:** Their roles can be summarized in the following tasks:
 - Assisting new students to integrate into University studies and student community and helping them with practical arrangements at the beginning of the study.
 - Familiarizing new students with to the University facilities, study guidance staff and other students.
 - Making sure that students know the most important practices related to studies: Registration for courses, attending lectures,

taking examinations, preparing a course schedule, social aspects ([Appendix: PHYS12](#), and [13](#)).

☛ **Head of the department:** Help students to explore their own interests in the physical sciences, and he grants acceptance of courses not offered by the University. He is also responsible for organizing study guidance in the Faculty and for administration of studies and partly also for study guidance related to administrative affairs.

☛ **Vice dean of academic affaires:**

- Provide academic information to students and introduce them to study systems and regulations.
- Help students to prepare their individual study plan and follow its progress.
- Provide guidance in the selection of major and minor subjects from the viewpoint of career guidance.
- Encourage students to exercise a positive role in the educational process and to participate in extra-curricular activities.

2.5 Appendices: Physics Program

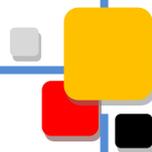
[PHYS06: The European Credit Transfer Accumulation System ECTS](#)

[PHYS10: Certificate of Bachelor of Physics](#)

[PHYS11: Graduation Project Guide](#)

[PHYS12: Physics Department Committees 2017](#)

[PHYS13: Academic Advising](#)



3. Exams: System, Concept and Organization

3.1 Exam Methods

Success in a course is usually based on the combination of grades awarded to term work and final examination. Each course has a total of 100 points. Out of this, the instructor may allocate 40% to 60% marks to the term work consisting of quizzes, homework, term projects and mid-term or other periodic assessments while the remainder is allocated to the final examination. The rubrics used for the grading system of Umm Al-Qura University are shown in Table 3.1. The instructor awards the grade as marks out of 100. The marks are converted to a letter grade and grade points as shown in Table 3.1. Table 3.2 shows a sample of student's grade report for six subjects in a typical semester ([Appendix: PHYS14](#)).

Grade of Incomplete (IC) is given to the student if the course requirements are not completed by the student. This is usually allowed in courses that require a project to be completed by the students. It is awarded only on the recommendation of the instructor and approval of the Department Council. The student getting IC must complete the requirements during the next semester otherwise the IC automatically changes to F ([Appendix UQU04](#)).

Some courses need more than one term to complete the requirements particularly the Graduation Project ([Appendix PHYS11](#)). For these courses, the student gets In Progress (IP) grade. IP grade does not require the approval of the departmental council. Student getting an IP is required to continue the work and appear for the assessment when the work is completed.

Table 3-1: The Grading system at UQU

| Marks out of 100 | Letter Grade | Description | Grade Points |
|------------------|--------------|-------------|--------------|
| 95-100 | A+ | Excellent | 4 |
| 90-less than 95 | A | | 3.75 |
| 85-less than 90 | B+ | Very Good | 3.5 |
| 80-less than 85 | B | | 3.0 |
| 75-less than 80 | C+ | Good | 2.5 |
| 70-less than 75 | C | | 2.0 |
| 65-less than 70 | D+ | Poor | 1.5 |
| 60-less than 65 | D | | 1.0 |
| Below 60 | F | Failure | 0 |
| | DN | Denied | 0 |
| | IC | Incomplete | |
| | IP | In Progress | |
| | W | Withdrawal | |
| | Q | Quit | |

Table 3-2: Example for Calculation of Grade Point Average

| Course | Credit Hours (CR.H) | Assigned Course Grade | Quality Points Per Credit Hour (QP/CR.H) | Computed Quality Points (CR.H) × (QP/CR.H) |
|--|---------------------|-----------------------|--|--|
| Course 1 | 3 | B+ | 3 | 9 |
| Course 2 | 3 | A | 3.5 | 10.5 |
| Course 3 | 3 | A+ | 4 | 12 |
| Course 4 | 3 | C+ | 2 | 6 |
| Course 5 | 4 | B+ | 3 | 12 |
| Course 6 | 2 | C+ | 2 | 4 |
| Totals | 18 | | | 60.25 |
| Computed GPA = Quality Points / Credit Hours = 60.25/ 18 = 3.347 | | | | |

Umm Al-Qura University requires that students do not miss more than 25% of the total number of lectures, labs and tutorials. Students failing to meet this requirement in any of the courses are prohibited from attending the final examination of that course and earn a DN (Denied) grade in that course. A student who is absent in the final examination of a course(s) for a valid reason accepted by the department council and the Dean of the Faculty is allowed to take the examination at a later date.

According to the regulations of Umm Al-Qura University all students are required to maintain a grade point average of at least 1.0 out of 4.0. A student failing to maintain the GPA of 1.0 will be placed on “academic probation” and is given two semesters to improve. After this period the student may be removed from the program ([Appendix UQU04](#)).

3.1.1: Academic Probation

At the beginning of each term, the Deanship of Admission and Registration provides each student with his full academic advising record showing the results of all the courses that have been studied from the study plan as well as the number of academic warnings that have been issued. The student gets a warning if his GPA is below 1.0 out of 4.0 in a term. The student is suspended if he gets a maximum of three (3) such consecutive warnings. After the third warning, being suspended for one term, Faculty Council, in coordination with the Deanship of Admission and Registration, may recommend to the University Council to give a fourth chance to those students who can raise their GPA by taking courses according to the rules of registration. The student will also be suspended if he is not able to complete the graduation requirements within a period of 15 terms. The academic suspension is governed by the Policy on Regulations of Study and Examinations ([Appendix UQU04](#)).

3.1.2: Assessment Methods

Student performance in each course is evaluated by the instructor assignment of a grade for this course. The number and types of graded assignments will vary according to what is most appropriate for the course in question. These assignments generally comprise some combination of examinations, quizzes, homework, and/or laboratory reports. Small projects and/or oral presentations

are required for some courses. The final year projects are graded by a group of Faculty members, not only by the supervisor. Therefore, the methods of evaluating student performance are summarized as ([Appendix PHYS14](#)). :

- a. *Quizzes*: to assess student gradual understanding of course subjects.
- b. *Case Study Reports*: to assess technical report writing and data collection abilities.
- c. *Discussion Groups*: to assess personal interaction and communication skills.
- d. *Midterm Exams*: to assess student understanding of course subjects, problem solving abilities, and analytical and design capabilities.
- e. *Final Exam*: to assess the student's overall understanding of the course as well as his analytical and problem solving capabilities.

3.2 Exam Organization

Shortly after the commencement of the Semester the Deanship of Admission and Registration will issue a detailed schedule to all Heads of Departments at UQU to commence the preparation for examinations within the academic semester ([Appendix UQU04](#)).

3.2.1 Procedures in Examination:

1. Student will not have allowed to enter the exam if a student arrives after thirty minutes of the start of the exam.
2. Invigilators are present in the examination classroom to ensure the proper conduct of the examination and to deal with problems which may arise.
3. Mobile phones must be switched off.

4. If a student feels unwell during examination, student should inform an invigilator then can go to the Student Health Service and will be accompanied by an invigilator.
5. Fire Alarm: If a fire alarm is activated, invigilators will instruct students to leave the classroom and to leave examination papers and answer on their desks. When it is safe to do so, students will be allowed back into the classroom to complete their examinations. Additional time will be allowed for the disruption. An incident report is completed. A copy of this report issues to the relevant Heads of Departments.
6. When the use of calculators/or materials is permitted, it is the responsibility of the relevant Department to check these items in the Examination classroom ([Appendix UQU04](#)).

3.2.2 Violations and Penalties

- Exam cheating could be through the use of cheat notes using mobile phones, writing on the desks, walls, or clothes, or by having information to assist student in examination that student is not allowed to have.
- If student is found in possession of unauthorized material during an exam, or/and not obeying exams rules or quietness, the invigilator will ask the student to leave the exam of classroom.
- A detailed report should be written and signed by the invigilator, the head of the department, and the student who was cheating.
- The report and all other documents caught with students should be presented to the dean of the Faculty.
- Upon dean's request, the students discipline committee investigates the students.

- Grade of Quit (GQ) is given to the student until the student's discipline committee declares its report to the dean; also the committees suggest any sanctions
- If the students discipline committee did not complete their report during the next semester, the Q automatically changes to F ([Appendix UQU11](#)).

3.2.3 Appeal Procedures

- A student who wishes to appeal an examination result must do so in writing to the head of the department, setting out in full the grounds for the appeal.
- Upon receipt of a written appeal, the head of the department will refer the matter to the Appeals committee. The appeal committee will handle all communications with the student and the Faculty ([Appendix PHYS13](#)).
- If necessary, a request should be send to the Faculty council to have the relevant marks rechecked and, within a specific time.
- Each student repeats appealing regarding the proven ineligibility appeal should be referred to the disciplinary committee

3.3 Appendices:

[Umm Al-Qura University](#)

[UQU04: Rules of Study and Examinations of Higher Education in Umm Al- Qura University](#)

[UQU11: Student Handbook](#)

Physics Program

[PHYS11: Graduation Project Guide](#)

[PHYS13: Academic Advising](#)

[PHYS14: Annual Program Report](#)



4. Resources

4.1 Staff Involved

Physics Department at Faculty of Science, Umm Al-Qura University employs a highly qualified 75 teaching staff members. The physics department proves keen to consolidate its human resources to broaden its scientific research basis, committee work, teaching of fundamentals, and student support, resulting in demand a mostly high expert teaching staff. The staff involved have been invited to work at the physics department from different countries and different graduation institutions. According to the competence, staff resources are suited to conduct the physics department. The staff's expertise is sufficiently supportive to the structure and curriculum of Physics and Medical Physics programs ([Appendix: PHYS15](#)).

Table 4.1 shows the distribution of the staff members according to their carriers in 2017, while figure 4.1 shows the distribution of the staff in the period 2012-2017. The staff members are distributed between Al-Zaher campus for female and Al-Abdia campus for male. Out of 75 staff members, 43 members hold PhD. The PhD's staff are distributed as 37 members for physics and 8 members for medical physics. More details about the PhD's staff members in the physics department, such as the specialty, Nationalities, and PhD-graduation institutes are given in Table 4.2. ([Appendix: PHYS15](#)).

The researches conducted by the teaching staff members spanned both the academic and the applied aspects of science. Research work is done by specialized research groups within the staff members and is obviously mainly limited to the male campus at present. Research activities of the Physics Department are mainly attributed to the research groups in the fields of Solid State Physics, Optics, Theoretical Physics, Medical Physics, Nuclear and

Radiation Physics. Table 4.3 shows the research interests of the staff members as a list of research groups according to their specialties. Although of a mostly high workload of teaching staff, the research activities of the teaching staff are very good. In 2014, there were 25 published papers, and in 2016 there are 42 published papers. The number of publications over the last 8 years is shown in Figure 4.2. As the research strength of the department is good, we keen to improve the research activities through the increase of the scientific projects, increase the number of postgraduate students and developing more cooperation between the staff members themselves and other members in other institutes. Figure 4.3 shows the number of research projects and the amount of funds gained by the staff members.

Table 4-1: Staff contributing in the Physics Department (2016-2017)

| Position | Physics | | Medical Physics | | Total |
|----------------------|---------|--------|-----------------|--------|-------|
| | Male | Female | Male | Female | |
| Professors | 4 | - | 3 | - | 7 |
| Associate Professors | 5 | - | 0 | - | 5 |
| Assistant Professor | 17 | 9 | 3 | 2 | 31 |
| Lecturer | 3 | 9 | - | 1 | 13 |
| Demonstrator | 3 | 13 | 1 | 2 | 19 |
| Total Academic staff | 33 | 31 | 6 | 5 | 75 |
| Technician | 9 | 6 | 2 | 2 | 19 |

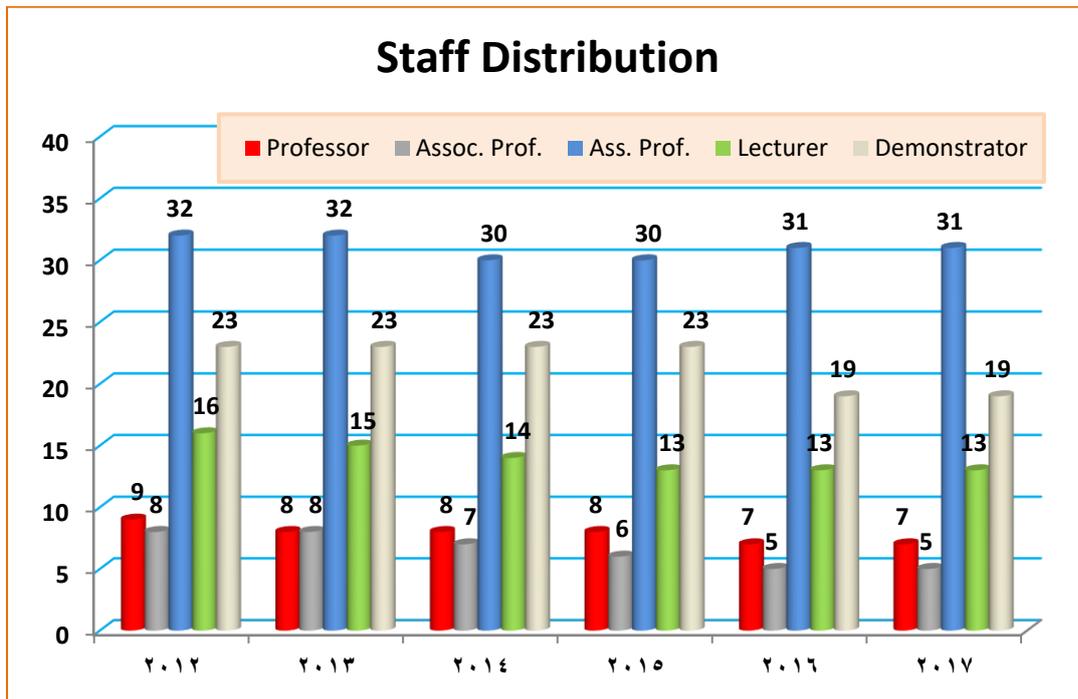


Figure 4.1 Total staff members' distribution in the Physics Department (2012-2017).

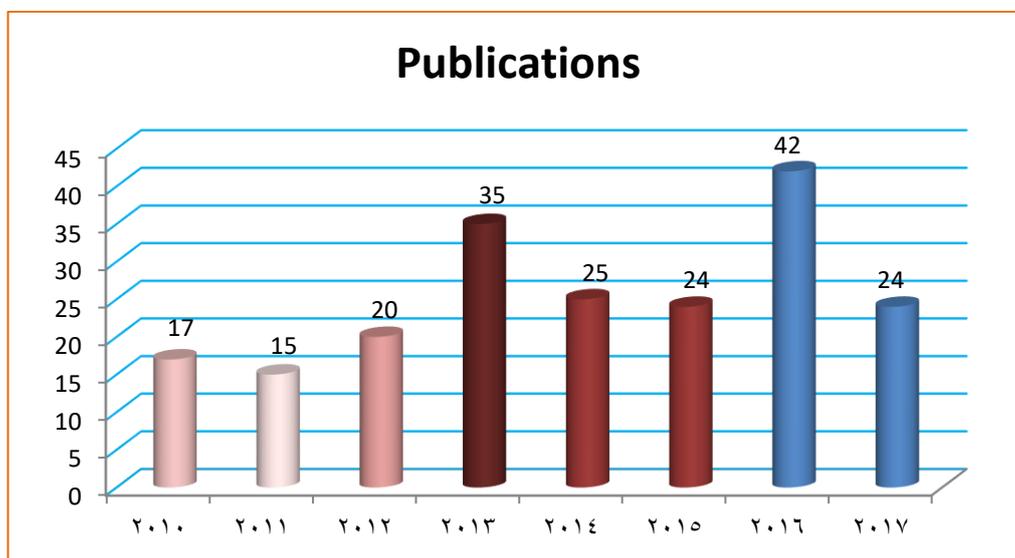


Figure 4-2 The progress of peer reviewed publications of the physics department over the last 8 years (Last updated 22 of December 2017).

Table 4-2: List of staff members for physics department

| No. | Faculty/ Teaching Staff Names | | full time Teaching / Research | Nationality | Academic rank | Speciality | | Institution graduated from | Degree |
|-----|---|-----|-------------------------------|-------------|---------------|-----------------|---------------------|-------------------------------|--------|
| | Name | M/F | | | | General | Specific | | |
| 1 | Abdul_Mageed Omr Ali Tayomi | M | T | Tunesian | Ass. Prof. | Physics | Solid state | University of Tunis Elmanar | Ph.D |
| 2 | Abdul_Rahman Masood Daif Allah Al_Oteebe | M | T | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 3 | Abdul_Rahman Yosef Mohamad Lasheen | M | T | Egyptian | Ass. Prof. | Physics | Materials science | Brno University of technology | Ph.D |
| 4 | Abeer Ahmad Abdullah Al_Sreehi | F | T | Saudi | Demonstrator | Medical Physics | Medical Physics | | BSc. |
| 5 | Adel Mohamad Al_Hashemi Al_Madani | M | T | Tunesian | Assoc. Prof. | Physics | Solid state | Tunis University | Ph.D |
| 6 | Afaf Moawad Abdul_Mageed Ali | F | T | Egyptian | Ass. Prof. | Physics | optics | Mansoura University | Ph.D |
| 7 | Ahmad Makbool Mohamad Hekami | M | T | Saudi | Ass. Prof. | Physics | Physics | | Ph.D |
| 8 | Ahmad Mohamed Abd-ElHadi Saidi | M | R | Saudi | Lecturer | Physics | | | MSc. |
| 9 | Ahmad Mohamad El_Hady Abdul_Ghafa Abdul_Ati | M | T | Egyptian | Assoc. Prof. | Physics | Solid state | Halle wittenberg | Ph.D |
| 10 | Al_Hussieny Al_Taher Mahdy Mohamed | M | T | Egyptian | Ass. Prof. | Physics | Radiation Physics | Ain Shams University | Ph.D |
| 11 | Al_Mongy Al_Sasi Omar Binmos | M | T | Tunesian | Ass. Prof. | Physics | Solid State | University of Tunis Elmanar | Ph.D |
| 12 | Ali Saleh Aal_Sharaa Al_Shamrani | M | T | Saudi | Ass. Prof. | Physics | Solid State | | Ph. D |
| 13 | Amal Ibrahim Al-Saadii | F | R | Saudi | Demonstrator | Physics | | | BSc. |
| 14 | Amani Ibrahim Saleh Al-Alawi | F | T | Saudi | Ass. Prof. | Medical Physics | Medical Physics | University of Surrey | Ph.D |
| 15 | Ameena Naif Mohamad Al_Ahmadi | F | T | Saudi | Ass. Prof. | Physics | NANO SCIENCE | Ohio University | Ph.D |
| 16 | Anas Alaa Asad Mohder | M | T | Saudi | Demonstrator | Mdeical Physics | PHYSICS | | BSc. |
| 17 | Arwa Mohamad Abdul_Hakeem Bokhari | F | T | Saudi | Demonstrator | Physics | PHYSICS | | BSc. |
| 18 | Asmhan Saud Ali Al_Shekhi | F | R | Saudi | Demonstrator | Physics | PHYSICS | | BSc. |
| 19 | Atif Ismale El-Hasaneen | M | T | Egyptian | Ass. Prof. | Physics | Theoretical Physics | Hamburg Uinversity | Ph.D |
| 20 | Badee Abd-Elhaleem Awiess | M | T | Egyptian | Ass. Prof. | Physics | PHYSICS | Cairo University | Ph.D |
| 21 | Balsam Fahd Ebraheem Soofi | F | R | Saudi | Demonstrator | Medical Physics | Medical Physics | | BSc. |
| 22 | Banan Bahawarith | F | T | Saudi | Demonstrator | Physics | PHYSICS | | BSc. |
| 23 | Danya Abdul_Rehem Meki Sendi | F | T | Saudi | Demonstrator | Physics | PHYSICS | | BSc. |
| 24 | Doaa Abdul_Illah sayed Mahmood | F | T | Egyptian | Ass. Prof. | Physics | Computer in Physics | Ain Shams University | Ph.D |
| 25 | Ebthal Mastoor Khedr Al_Thebeti | F | T | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 26 | Efat Abdul_Allah Ali Ali Rashed | F | R | Saudi | Lecturer | Physics | Physics | | BSc. |

| No. | Faculty/ Teaching Staff Names | | full time Teaching / Research | Nationality | Academic rank | Speciality | | Institution graduated from | Degree |
|-----|--|-----|-------------------------------|-------------|---------------|-----------------|---------------------|-----------------------------|--------|
| | Name | M/F | | | | General | Specific | | |
| 27 | Eman Abdul_Baset Gaber Madkhli | F | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 28 | Eman Ahmad Abdul_Raheem Bokhari | F | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 29 | Imtenan Tallal Al-Utabi | F | R | Saudi | Lecturer | Physics | Physics | | MSc. |
| 30 | Isam Hamed Mohamad Al_Ahdal | M | T | Saudi | Prof. | Physics | Optics | Ohio University | Ph.D |
| 31 | Fadia AbdElaziz Abdulla Ibrahim | F | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 32 | Fahad Abdullah Shokr Al_Hashemi | M | T | Saudi | Ass. Prof. | Physics | Physics | | Ph.D |
| 33 | Fatma El-Sayed Mahrous Othman | F | T | Egypt | Ass. Prof. | Physics | Theoretical Physics | Tanta University | Ph.D |
| 34 | Fayz Hmad Hmood Al-Ghorabie | M | T | Saudi | Prof. | Medical Physics | Medical Physics | Wales University | Ph.D |
| 35 | Fayza Abdul_Kader Hasan Agag | F | T | Saudi | Lecturer | Physics | Nuclear Physics | | MSc. |
| 36 | Galal El_Naser El_Hady Al_Wafalyi | M | T | Tunesian | Ass. Prof. | Physics | Solid State | Nantes University | Ph.D |
| 37 | Ghada Abd-Elrahman Kheder Mobark | F | R | Saudi | Lecturer | Physics | Physics | | BSc. |
| 38 | Hanan Aish Zamel Al-Utabi | F | T | Saudi | Demonstrator | Physics | Soid State | | MSc. |
| 39 | Hanan Hosien Ebraheem Amer | F | T | Egyptian | Ass. Prof. | Medical Physics | Medical Physics | Cairo University | Ph.D |
| 40 | Hend Abdul_Aziz Ahmad Al_Hagagi | F | T | Saudi | Lecturer | Physics | Optics | | MSc. |
| 41 | Hoda Ahmad Abdullah Al_Allawi | F | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 42 | Hoda Gowybr Aneez Al_Salmi | F | T | Saudi | Lecturer | Physics | PHYSICS | | MSc. |
| 43 | Hosam Salah El_Deen Mohamad Ebraheem | M | T | Egyptian | Ass. Prof. | Medical Physics | Medical Physics | Mansoura University | Ph.D |
| 44 | Khaled Abdul_Waged Mohamad Abdul_Lateef | M | T | Egyptian | Prof. | Physics | Nuclear Physics | Banha University | Ph.D |
| 45 | Kahled Al-Thqafi | M | T | Saudi | Ass. Prof. | | | | Ph.D |
| 46 | Mashaël Saud El-Harbi | F | T | Saudi | Lecturer | Medical Physics | Medical Physics | | MSc. |
| 47 | Mehr Al_Sheryani Mohamad Lolo | M | T | Tunesian | Ass. Prof. | Physics | Solid State | University of Tunis Elmanar | Ph.D |
| 48 | Mohamad Omar Boustimi | M | T | Franch | Ass. Prof. | Physics | Atomic Physics | Paris University | Ph.D |
| 49 | Mohamad Abdul_Aziz Mohamad Sedeeq Kutb | M | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 50 | Mohamad Khalel Mohamad Al_Turkestani | M | T | Saudi | Ass. Prof. | Physics | Solid State | Durham University | Ph.D |
| 51 | Mohamad mahmod Sabri Salah El_Deen Mohamad | M | T | Egyptian | Assoc. Prof. | Physics | Renewable energy | Ain Shams University | Ph.D |
| 52 | Mohamad Owaid Fahd Al_Omary | M | R | Saudi | Lecturer | Physics | Physics | | MSc. |
| 53 | Mona Abd El-Khalek Mohaseeb | F | T | Egyptian | Ass. Prof. | Physics | Bio-Physics | Alfarabi_Kazakh National | Ph.D. |

| No. | Faculty/ Teaching Staff Names | | full time Teaching / Research | Nationality | Academic rank | Speciality | | Institution graduated from | Degree |
|-----|---|-----|-------------------------------|-------------|---------------|-----------------|---------------------|-----------------------------|--------|
| | Name | M/F | | | | General | Specific | | |
| | | | | | | | | University | |
| 54 | Naser alian El-Hazmi | F | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 55 | Noha Farag Mohamad Abdullah Al_Harbi | F | T | Saudi | Lecturer | Physics | Physics | | MSc. |
| 56 | Noha Abd El-Haleem Filmban | F | T | Saudi | Ass. Prof. | Physics | Theoretical Physics | King Saud University | Ph.D |
| 57 | Noor Mahmod Mohamad Abdullah Basafr | F | R | Saudi | Demonstrator | Physics | Condensed matter | | MSc.. |
| 58 | Omaima Abdul_Ilah Abdul_Raheem Bawazeer | F | R | Saudi | Demonstrator | Physics | Physics | | BSc. |
| 59 | Rabab Khaled Mohamad Sendi | F | T | Saudi | Ass. Prof. | Physics | Physics | | Ph.D |
| 60 | Ramadan Ali Hasan Ali | M | T | Egyptian | Ass. Prof. | Medical Physics | Medical Physics | Cairo University | Ph.D |
| 61 | Reem Abdul-Aziz Al-Theqafee | F | T | Saudi | Lecturer | Physics | Physics | | MSc. |
| 62 | Roshdi Saudi Mohamad Awad | M | T | Egyptian | Prof. | Physics | Spectroscopy | Cairo University | Ph.D |
| 63 | Said Mohamad Mohamad Attia | M | T | Egyptian | Assoc. Prof. | Physics | Solid State | Tongji University | Ph.D |
| 64 | Saleh Marzook Berki Al_Lokmani | M | T | Saudi | Ass. Prof. | Physics | Soid State | Durham University | Ph.D |
| 65 | Sameer Solyman Ahmad Natto | M | T | Saudi | Prof. | Medical Physics | Medical Physics | Wales University | Ph.D |
| 66 | Samr Mohamad Sadoon Al_Selmi | F | T | Saudi | Lecturer | Physics | Solid State | | MSc. |
| 67 | Saud Hameed Ahmad Al_ahyani | M | T | Saudi | Prof. | Medical Physics | Medical Physics | Surrey University | Ph.D |
| 68 | Taha Mohamad Taha Al_Fawaal | M | T | Egyptian | Ass. Prof. | Medical Physics | Radiation Physics | Cairo University | Ph.D |
| 69 | Tasneem Malak Mohamad Deen Azeem | F | T | Bakistani | Ass. Prof. | Physics | Nuclear Physics | | Ph.D |
| 70 | Thamer Salman Faleh Al_Omeery | M | T | Saudi | Ass. Prof. | Physics | polymer | Curtin University | Ph.D |
| 71 | Turky Othman Hameed Al_Maatani | M | R | Saudi | Lecturer | Physics | Physics | | MSc. |
| 72 | Waleed Blkasem Al_Ekreml Balhag | M | T | Tunesian | Ass. Prof. | Physics | Theoretical Physics | University of Tunis Elmanar | Ph.D |
| 73 | Waleed Gameel Ahmad Altaf | M | T | Saudi | Assoc. Prof. | Physics | Radiation Physics | University of Surrey | Ph.D |
| 74 | Yosry Mohamad Eid Moustafa | M | T | Egyptian | Prof. | Physics | Solid State | Odesa State University | Ph.D |
| 75 | Zaynab Solyman Ali Matter | F | T | Saudi | Ass. Prof. | Physics | Nuclear Physics | Cairo University | Ph.D |

Table 4-3: Research groups at the Physics Department (2017).

| Physics Department Staff Members | | | |
|---|---|----------------------------|--------------------|
| Experimental Physics | | Theoretical Physics | |
| Material Science | Yousry Mustafa | Condensed matter | Ameenah Al-Ahmadi |
| | Roshdi Seoudi | | Atif Ismail |
| | Adel Madani | | Walid Belhadj |
| | M. K Al-turkestani | | |
| | Mehrez Loulou | | |
| | Abdelmajid Timoumi | | |
| | Mongi ben Moussa | | |
| | Jaleal Ouerfelli | | |
| | Fahad Alhashimi Alamar | | |
| | Khaled Al-thagafy | | |
| | Ahmad El-Hadi | | |
| | Abdelrahman Lashin | | |
| | Said Attia | | |
| | Thamer Alomayri | | |
| | Saleh Alluqmani | | |
| Doaa Mahmoud | | | |
| Mouna Mouhasseb | | | |
| Applied Optics | Issam Al-Ahdali | Astrophysics | Badie Korany |
| | Mohamed Sabry | | |
| | Afaf Ali | | |
| Radiation and Nuclear Physics | Waleed Altaf | Nuclear Physics | Khaled Abdel-waged |
| | El Hussieny El Taher | | Nuha Felemban |
| | Zinab Matar | | |
| Atomic Physics | Mohamed BOUSTIMI | Atomic Physics | Fatma El-Sayed |
| Medical Physics | Sameer Natto Saud Al_ahyani Fayz Al-Ghorabie Ramadna Hasan Taha Al_Fawaal Hosam d Ebraheem Hanan Amer Amani Al-Alawi | | |

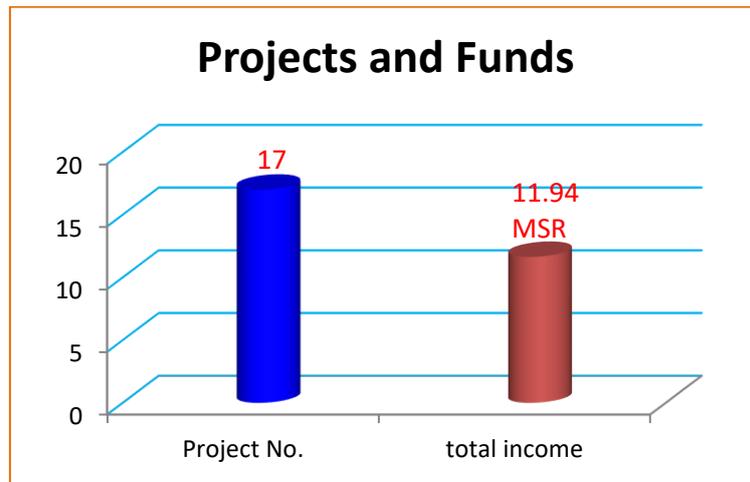


Figure 4-3: A schematic diagram representing the amount of funding over the last 8 years (Last updated 2017).

4.2 Staff Development:

Umm Al-Qura University offers a lot of workshops to develop and improve the ability of staff in the field of teaching and research. Figure 4.4 shows the announcement on the website of the Deanship of Academic Development and Quality Assurance (<http://quality.uqu.edu.sa/program-male.html>).

| عن العمادة - الوكالات - الوحدات - البرامج التدريبية - اتصل بنا | | | | |
|---|-------------------------|--|--------|--------------------------------------|
| جدول الدورات التدريبية للفصل الدراسي الثاني 1435/1436 هـ شطر الطلاب | | | | |
| م | الاسبوع | اسم البرنامج | الأيام | تاريخ التنفيذ |
| 1 | الاسبوع الأول | الاعتماد الأكاديمي | 2 | 8-9/4/1436 هـ الموافق 29/1/2015-28 |
| 2 | | دفع وتحسين الجودة باستخدام مؤشرات الأداء | 2 | 22-23/4/1436 هـ الموافق 12/2/2015-11 |
| 3 | الاسبوع السادس | إدارة وحدات الجودة | 2 | 10-11/5/1436 هـ الموافق 2/3/2015-1 |
| 4 | الاسبوع السابع | استخدام البرنامج الإحصائي Spss المستوى 1 | 3 | 17-19/5/1436 هـ الموافق 10/3/2015-8 |
| 5 | | إدارة المشاريع الأكاديمية | 2 | 20-21/5/1436 هـ الموافق 12/3/2015-11 |
| 6 | الاسبوع العاشر | التخطيط الاستراتيجي 3 | 3 | 9-11/7/1436 هـ الموافق 30/4/2015-28 |
| 7 | الاسبوع الثاني والعشرون | أساليب التقييم الحديثة | 2 | 17-18/7/1436 هـ الموافق 7/5/2015-6 |
| عدد الأيام التدريبية للفصل الثاني | | | 16 | |

| عن العمادة - الوكالات - الوحدات - البرامج التدريبية - اتصل بنا | | | | |
|--|---|--------|--|--|
| البرامج التدريبية بوكالة عمادة التطوير الجامعي والجودة النوعية شطر الطالبات خلال الفصل الدراسي الثاني 1435/1436 هـ | | | | |
| م | اسم البرنامج | الأيام | تاريخ التنفيذ | |
| 1 | التطبيقات الحديثة في تقنيات التعليم | 2 | الأحد والثنين 12-13 / 4 / 1436 هـ | |
| 2 | التقويم البنائي | 2 | الاثنين والثلاثاء 20-21 / 4 / 1436 هـ | |
| 3 | أساليب وإجراءات المراجعة داخل الكليات | 2 | الأحد والثنين 26-27 / 4 / 1436 هـ | |
| 4 | مهارات التفكير العلمي | 2 | الثلاثاء والأربعاء 28-29 / 4 / 1436 هـ | |
| 5 | المرأة القيادية الفعالة في التعليم العالي 1 | 2 | الأحد والثنين 3-4 / 5 / 1436 هـ | |
| 6 | المرأة القيادية الفعالة في التعليم العالي 2 | 1 | الثلاثاء 5 / 5 / 1436 هـ | |
| 7 | تحديد وقياس مخرجات التعلم | 2 | الأربعاء والخميس 6-7 / 5 / 1436 هـ | |
| 8 | معايير الجودة في العملية التعليمية | 2 | الثلاثاء والأربعاء 12-13 / 5 / 1436 هـ | |

Figure 4-4 the advertisement of the workshops on the website of the Deanship of Academic Development and Quality Assurance.

Also the Deanship of Scientific Research offers some workshops to develop the research activity of the staff. Their website (<https://uqu.edu.sa/page/ar/93234126>) announce some workshops for the scientific research ([Appendix UQU10](#)). The teaching staff has the opportunity to attend any workshops and conferences

(Appendix PHYS09). Therefore, the University ensures that the teaching staff has the appropriate qualifications and experiences for teaching.

The members teaching staff are working a full-time, with good moral character, good reputation, scientific and practical efficiency and working with the spirit of teamwork. The members teaching staff are involved on a continuing basis in scholarly activities that ensure they remain up to date with the latest developments in their field and can involve their students in learning that incorporates those developments. The academic staff in the department have a high degree of professionalism, experience and highly skilled in the general and specific area of specialization.

Most of the staff members are participating in research activities in the field of their study and teaching, also involve their students in these activities. Table 4.4 shows the variation of the No. of master students and the number of scientific papers in the period 2012-2016

Table 4-4: scientific research and scientific activities of members of Physics Department (2012-2017)

| Scientific Activity / Year | | 2012-2013 33-34 H | 2013-2014 34-35 H | 2014-2015 35-36 H | 2015-2016 36-37 H | 2016-2017 37-38 H |
|----------------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| Post Graduate Students | No. of students entering the program of Master in Physics/Medical Physics | 8 | 4 | 2 | 3 | 3 |
| | No. of graduate Master Student | - | - | 2 | 9 | - |
| | Total No. of Master Student | 9 | 13 | 13 | 7 | 10 |
| Scientific publications | | - | - | - | - | 9 |

4.3 Fund and Equipments

4.3.1 Institutional Environment

The institutional environment (facilities, equipment, and infrastructure) at the Department of Physics, Faculty of Applied Science include sufficient space and the technology which allow the department to deliver effective and efficient learning process. The instructional methods and approaches in a conducive learning environment will be more effective by a good use of these facilities and equipments that enable students to take responsibility for their own learning. The use of these facilities and equipments are assessed regularly in terms of their suitability for all stakeholders, i.e. students, Faculty and staff.

In the physics department, there are routine maintenance for the laboratories and the equipments. In all classrooms and laboratories, there are an effective technical tools such as Data show. Table 4.5 shows the distribution of the classrooms and the laboratories in male and female campus ([Appendix PHYS16](#)).

Table 4-5: The classrooms and laboratories in the physics department

| Item | Male campus (Al-Abdia) | Female campus (Al-Zaher) |
|---|---------------------------|-----------------------------|
| Laboratories for undergraduate students | 13 | 7 |
| Classrooms | 4 | 5 |
| Simulation Room | 1 | - |
| Research Laboratories | 5 | - |

Comments:

The female students and female staff will move to a new campus in the near future. The campus is under infrastructure. There will be around more than 35 laboratories and classrooms for the physics department.

4.3.2 Laboratories of physics

There are 8 specialized laboratories for student of physics. The names of the laboratories are given in table 4.6 ([Appendix PHYS16](#)).

Table 4-6: The name of the laboratories in the physics department

| Laboratory | Program |
|--|-----------------------------|
| 1- PHS 101 (General Physics). | Physics and Medical Physics |
| 2- PHS 102 (Mechanics). | Physics and Medical Physics |
| 3- Electricity and Magnetism. | Physics and Medical Physics |
| 4- Measurements and Instruments. | Physics and Medical Physics |
| 5- Optics. | Physics |
| 6- Modern Physics. | Physics and Medical Physics |
| 7- Nuclear Physics. | Physics and Medical Physics |
| 8- Electronics and Solid State Physics | Physics |

There are 11 (male) technicians and assistant researchers and 8 (female) technicians responsible for these laboratories. All technicians are highly qualified and well trained. Table 4.7 shows the name and qualifications of the technicians within the department ([Appendix PHYS16](#)).

Table 4-7: The technicians in the physics department

| | Technicians | Qualifications | Responsibility | Campus |
|---|---------------------|---|---|----------|
| 1 | Jar Allah Al-Tawili | Diploma of Minute Labs | Laboratory of General Physics (1) | Al-abdia |
| 2 | Mazen Bashraf | BSc. of Chemistry | Laboratory of General Physics (2) | Al-abdia |
| 3 | Yousef Alassmari | Graduated from Technical Faculty in Electronics | Laboratory of electricity and Magnetism | Al-abdia |
| 4 | Mohammed Mirah | Diploma of Optics | Laboratory of Measuring Instruments | Al-abdia |
| 5 | Mazen Aljawi | Diploma of Optics | Laboratory of Optics | Al-abdia |
| 6 | Jameel Alhazmi | BSc. of Physics | Laboratories of Modern and Nuclear | Al-abdia |

| | Technicians | Qualifications | Responsibility | Campus |
|----|--------------------|--|--|----------|
| | | | Physics | |
| 7 | Hussein Althubyani | BSc. of Physics | Laboratories of Eelctronics | Al-abdia |
| 8 | Maher A. Alkasim | BSc. of Physics | Laboratory of General Physics (2) | Al-abdia |
| 9 | Hussein Al-Hashmi | BSc. of Physics | Laboratory of electricity and Magnetism | Al-abdia |
| 10 | Alaa Al-Subaie | BSc. of Physics | Laobratory of Medical physics | Al-abdia |
| 11 | Yaser Bahashwan | BSc. of Physics | Laobratory of Medical physics | Al-abdia |
| 12 | Maysoon Albalbesi | BSc. of Physics | Lab. of general physics 1 and 2 | Al-zahir |
| 13 | Darien Abdullah | BSc. of Biology | Lab. of Nuclear Physics | Al-zahir |
| 14 | Zakia Al-Kathiri | Diploma of laboratories | Lab. of Modern Phycis | Al-zahir |
| 15 | Fatma Al-Hoqbani | BSc. of Physics Master of education | Lab. of electronics and Lab. of measuring instruments | Al-zahir |
| 16 | Maatoka Salem | Diploma of laboratories | Lab. of Optics | Al-zahir |
| 17 | Israa Obied | BSc. of computer science | Lab. of general physics 1 and 2 | Al-zahir |
| 18 | Wadha Alotaibi | BSc. of Physics | Lab. of Nuclear | Al-zahir |
| 19 | Suha Khan | MSc. of Physics | Lab of optics and Medical Laboratoreis | Al-zahir |

4.3.3 Information Technology

The main goal of the deanship of the information technology is to provide the support systems for smart and advance research, provide the Integrated and Effective Educational Systems, and E-Services. Therefore, they are willing to enable information resources and tools to be made accessible and well integrated to facilitate the processes of Education, learning and teaching, Research, and Management for all stakeholders. From the other hand, the

deanship of E-learning offers continuous workshops to enable the staff and the students to use facilities to enhance the teaching process ([Appendix UQU12, and 13](#)).

The Department of Physics established its first stimulating and Learning Lab in 2011, within the Faculty of Applied Science, providing the technology and support for its effective use. The simulation room has 29 PCs with server and Smart Board. They are equipped with up-to-date technology and multiple software packages, both specialized and the more general and popular, for the use of both students and Faculty. In addition, each Faculty member in the department has office computers running standard productivity software, such as Microsoft Office; they also provide internet facilitate (Wi-Fi spot), and print facilities; virus protection and back-up support; and web services. However, there are farther 12 computers in the meeting room available for students and staff.

All students are able to access PCs, Library and Information Resources, software applications, the Internet, on-line resources, e-mail, and printing resources. Staff offer open access to computer labs from at least 8:00 a.m. to 10:30 p.m, to help students log onto the student network; they also answer questions relating to use of the resources. Two general purpose teaching labs are shared while special purpose labs are designated to accommodate individual disciplines ([Appendix UQU05](#)). The Faculty has also smart classrooms which contain E-learning equipment such as a smart board, projector, Internet connectivity, and full wireless network.



4.3.4. Library

Library, King Abdullah bin Abdul Aziz at Umm Al-Qura University is an institution of scientific, cultural, educational, and it aims to collect information sources and development of different ways (buying and gifting, exchange and deposit), organize, and retrieve the shortest time possible, and submitted to the community of beneficiaries on their differences through a range of traditional services, as services loan, references and periodicals, photography and modern services as services take ongoing, and broadcast selective information, and other services calculated by means of qualified manpower scientifically and artistically and technically in the field of library and information science ([Appendix UQU14](#)).

The objectives of the library in the following:

- Provide sources of human knowledge to serve the various scientific disciplines at the University.
- Systems development office in line with recent developments in the field of library and information services.
- Provision of information services and office to facilitate search and retrieval through to the decisions of publications, catalogs, guides, lights, and other.
- Exchange of publications and University publications deanship with universities and scientific institutions at home and abroad, and cooperation and coordination with the similar.
- Induction programs for students and Faculty members and the services provided by training how to maintain an edge using available sources of information, and how to take advantage of the assets of the deanship.



- Provide services to students by responding to inquiries and requests to meet as soon as possible. Create the right climate inside the library for study and research.

Library includes material and software appropriate to serve the attendees the library. Sections of the Central Library:

1. Library Management
2. Services beneficiaries
3. The electronic catalog
4. Hall of free viewing and reading
5. Periodicals
6. References and foreign books

Saudi Digital Library (SDL): is the largest academic gathering of information sources in the Arab world, with more than (310,000) scientific reference, covering all academic disciplines, and the continuous updating. Library has contracted with more than 300 global publishers.

It also provides a digital environment for various Saudi Universities, and research organizations in common with it in. This environment has the following advantages:

- One central management- manages this huge content, and it is constantly updated.
- Common share by one University would benefit other universities in any scientific field.
- Enhance the status of universities when evaluating, for Academic Accreditation, and through sources rich, modern, and publish the best Global Publishers.

- Bridging the gap between Saudi universities, where emerging universities can get the same service as available in major Saudi universities.

Faculty Science Library:

Library lies in the Applied Science Faculty consists of two floors at the University the ground floor on a space approximate 400 square meters.

Library Departments:

- Library Administration
- Beneficiary Services
- Electronic Index

Library's Possessions:

Library possess a range of various information sources estimated with a number of titles, copies and volumes in all physical sciences. It contains about 10000 books in native language (Arabic) and 12000 books in foreign language (English). The total entrance (student visiting) is about 100 daily. The number borrowing of books each semester is about 200. The number of students entering daily for using Internet is about 120 students.

Library Systems:

Management of the library and its indexes is done through its coding system which is considered to be among the modern systems used in the library management.

Library Services:

The database includes information about both printed and electronic books as well as the storage information of printed journals. Electronic books can be accessed via a link to the Library catalogue. The Library provides its customers with library and information services both on-site and online.

4.4 Appendices:

Umm Al-Qura University

[UQU05: Right and Duties of the student Regulations for Students in Umm Al-Qura University](#)

[UQU10: Quality Guide for Studying and Learning](#)

[UQU12: The general rules of E-learning at Umm Al-Qura University](#)

[UQU13: General Rules of E-learning within KSA](#)

[UQU14 Library profile Abdul Aziz university library](#)

Physics Program

[PHYS09: Attendance Certificate](#)

[PHYS13: Academic Advising](#)

[PHYS14: Annual Program Report](#)

[PHYS15: Staff Handbook for Physics 1437/1438](#)

[PHYS16 Laboratories Handbook](#)

5. Documentation and Transparency:

5.1 Relevant regulations

The regulations for study-relevant issues are in place and made available. These regulations include all the information necessary about the admission, courses and completion of the degree.

All credit hours from the total credits are required to obtain the Degree of Bachelor of physical science from Faculty of Applied Science at Umm AL-Qura University. These credit hours include the Bachelor's project and graduation project guide ([Appendix PHYS08](#)).

The student must complete the required credit hours of study plan.

5.2 Diploma Supplement

A diploma supplement is formulated and attached to the B.Sc. degree certificate ([Appendix PHYS10](#)). The academic registration of the student includes much information about the Faculty, full description about plan study of the program, courses and the structure of the B.Sc. degree.

Mandatory, an overall grade is given. It represents the average of all the courses completed by the student according to credit hours of each course accompanied with the certificate of academic degrees and has a record of each course also explains in detail how many years spent in the student study. The detailed calculation of the overall grade and its equivalent weight to the credit hours of each course is calculated systemically.

5.3 The Faculty's Commitment

Actual students and Faculty members are more favorable than anything else, during or after studies or work in the Faculty of Applied Sciences. One more of the following reasons, can be treat in the framework of the law. The Faculty of Applied Sciences applies the policy such as (admissions, teaching, research provision, scholarships, grants, student support, accommodation, facilities, health and safety,

personal conduct, student complaints and disciplinary procedures) for all students without any exception or differentiate.

The University also accepts resident foreign students. Foreign students at the Faculty of Applied Science are with a rate of 4% of the total number of students.

The Physics department continually applies commitment by:

1. Eliminating discrimination through training, dissemination of codes of practice and guidance.
2. Taking into account any outbound or practice adopted by the commission for Equality and Human Rights, which rules. It makes this policy by codes of practice and guidance available to all staff and students.
3. Terms of this policy: all associated codes of practice and guidance are regularly reviewed by the Faculty.
4. Regularly review the terms of this policy and all associated codes of practice and Guidance.

5.4 Responsibilities

5.4.1 Heads of Departments

Heads of the Faculty's departments are responsible for the day to day implementation and delivery of the Faculty's objectives for diversity and equal opportunities in their department ([Appendix UQU15](#)) in order to :

- Ensure excellence in the delivery of teaching by motivating, training, monitoring and developing staff.
- Be responsible for the organization, implementation and evaluation of department.
- Monitor each student's achievements relative to their individual ability and aptitude.
- Evaluate and revise all course materials at regular intervals

5.4.2 All Staff and Students

All members of the Faculty have a duty to act in accordance with the University policy, and therefore to treat colleagues with dignity at all times and not to discriminate against or harass other students or members of staff, whether junior or senior to them. The Faculty expects all its staff and students to take personal responsibility for familiarizing themselves with this policy and to conduct themselves in an appropriate manner at all times to respect equality of opportunity for all staff, students, applicants and visitors. The Faculty regards any breach of this policy by any employee (s) or student (s) as a serious matter to be dealt with through its agreed procedures and which may result in disciplinary action and possibly dismissal ([Appendix UQU01, and 15](#)).

Transparency within the department be through:

- Students with E-Services to facilitate their communication process with various sectors of the University
- Freedom of a Faculty member in grades download on the site
- Existence of lists of numbers and grades students' papers and tests within the department
- Students test and watch grades quizzes across e-learning site
- Students with E-Services to facilitate their communication process with various sectors of the University
- Providing suitable environment for virtual classrooms and means of communication between students themselves and with Faculty members
- Providing IT environment including software servers to contribute in maximizing the scientific research development in the University

5.5 Appendices:

Umm Al-Qura University

[UQU01: The Statute of the Council of Higher Education and Universities](#)

[\(University Act\).](#)

[UQU15: New Teacher's Quality Manual](#)

Physics Program

[PHYS08: Study Plan 19](#)

[PHYS10: Certificate of Bachelor of Physics](#)

6. Quality Management: quality assessment and development

Umm Al-Qura University has been keen to achieve all-inclusive quality in all its institutions, faculties and academic departments in order to keep place with the contemporary developments and to meet the requirements for the Kingdom's growth and the job market. This triggered a series of efforts aimed to establish a body that should be responsible for quality and accreditation in the University. As a result, the Deanship of University's Development and Quality Assurance was established, taking into account the development of a structure with designations and responsibilities dealing with development and quality.

In 1429 AH, the Deanship of Academic Development and Quality Assurance was established, which is on its way to achieve total quality management system at UQU. The Deanship aims to establish a Total Quality Management (TQM) system and processes that guarantee its development and improvement in the academic, administrative, and research organizations in order to enhance the performance of human and learning outcomes at Umm Al-Qura University. This would further improve outcomes and services in academic and scientific research as well as community services; thereby improving overall performance required for getting national and international accreditation. It also focuses on the University's leadership, its Islamic identity and its international ranking.

The University's strategic plan which embodies its mission in seven main issues, comprises a number of measures and programs with a timeframe attached for their implementation. It is considered to achieve overall quality standards and improve performance. Getting accreditation is one of the main seven priorities, and the senior management of the University grants it top position for its implementation. The University has strived to meet the requirements for institutional and programs accreditation both at national and international levels. In its quest to meet the requirements for programs accreditation with a national organization, the University, represented by the Deanship of Academic Development and Quality

Assurance, has signed a contract with the National Commission for Academic Accreditation and Assessment (NCAAA) in order to raise the quality level of PLOs of programs at the University in all its operations and outcomes. The physics program was one of the programs have been selected for national accreditation. This is an opportunity to the physics staff members to gain experience in relation to preparing themselves for conducting self-study and meeting the NCAAA system requirements for quality assurance and achieving academic accreditation. To develop a set of practical procedures, measures and administrative arrangements for conducting the process of self-evaluation at the physics program, several committees were created in order to support the development of a quality assurance system and deployed at the department and Faculty levels including ([Appendix PHYS12](#)):

- 1- Curriculum Committee
- 2- Laboratories Committee
- 3- Scheduling Committee
- 4- Academic Advising Committee
- 5- Student Activities Committee
- 6- Appeal and Complaints Committee
- 7- Postgraduate Studies Committee
- 8- Scientific research Committee
- 9- Quality Assurance & Academic accreditation Committee
- 10- Measurement and Evaluation Committee
- 11- Employment Committee
- 13- **Alumni** and scholarships Committee
- 14- Occupational Health & Safety Committee

The following Table 6.1 summarizes the members of working committees in the physics department, and their responsibilities

Table 6-1: Working committees in the physics department, and their responsibilities

| Committee | Member | Responsibilities |
|--|--|---|
| 1- Curriculum Committee | Issam Al-Ahdali Ameenah Alahmadi Faiz Alghorabie Fatma Alsaaid Said Atiia Mohamed Al Turkestani Ramadhan Ali | <ol style="list-style-type: none"> 1. Review the course description files in the department each year, using all Section Members. 2. Review the study plans in the department annually. 3. Follow up and discuss the negative and positive aspects of the courses in the department. 4. Follow-up developments in the corresponding departments in other universities to benefit from different experiences. 5. To benefit from the feedback from the faculty members Beneficiaries to develop study plans in the department and develop programs. 6. Preparing the program descriptions with the help of all faculty members. 8. Prepare and organize the committee's file. |
| 2- Laboratories Committee | Badie Korany Rabeb Sindi Khaled Althakafi Ibtihel Althbiti Taha Mohamed Taha Baha Bahwireth Adel Madani | <ol style="list-style-type: none"> 1. Preparing a comprehensive vision for the organization and development of laboratories. 2. Determine the necessary equipment and testing needs. 3. Choose the supervisor and technician. 4. Check for sufficient number of tests to cover the semester and is consistent with the study plan. 5. To give an idea about adding new |

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| | <p>Denia Sindi</p> <p>Ali S Alshomrany</p> <p>Abir Srihi</p> <p>Mehrez Loulou</p> <p>Souha Khan</p> <p>Mohamed Sabri</p> <p>Fatma Hakbeni</p> | <p>experiments to the laboratories.</p> <p>6. Verification of the Experimental Lab Experiments.</p> <p>7. Verification of the announcement of the names of the experiments and the distribution of their teaching throughout Semester.</p> <p>8. Prepare and organize the committee's file</p> |
| 3- Scheduling Committee | <p>Ahmed Hikami</p> <p>Zineb Matar</p> <p>Ramadhan Ali</p> <p>Mouna Mehseb</p> <p>Khaled Thagafi</p> <p>Nuha Flomban</p> <p>Ali S Alshomrany</p> <p>Samar Salami</p> <p>Faiza Ajej</p> <p>Denia Sindi</p> | <p>1. Survey the members of the faculty in the courses they wish to Teaching</p> <p>2. Compiling the numbers of students in all courses to be taught in and distribution according to quality standards</p> <p>3. Setting the curriculum for each chapter to achieve justice and equality between all without exception.</p> <p>4. Ensure that there is no overlap between theoretical and practical lectures.</p> <p>5. Prepare and organize the committee's file</p> |
| 4- Academic Advising Committee | <p>Abdelmajid Timoumi</p> <p>Mouna Muhsab</p> <p>Taha Mohamed Taha</p> <p>Ibtihel Thbiti</p> <p>Mongi Ben Moussa</p> <p>Rim Thakafi</p> <p>Mushael Harbi</p> <p>Banen Bahwireth</p> | <p>1. Distributing faculty members to academic guidance for students.</p> <p>2. Follow up students and students in the registration of courses and delete and add.</p> <p>3. Guidance of students in the course and necessary skills.</p> <p>4. Follow-up students who fail and guide them academically.</p> <p>5. Receiving students' wishes regarding the registration of courses Study</p> <p>6. Preparing and organizing the</p> |

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| | | committee's file. |
| 5- Student Activities Committee | Yousry Mustafa Hanan Amer El Hussieny El Taher Hind Hajjaji Saleh Alluqmani | <ol style="list-style-type: none"> 1. Make an annual plan for student activities. 2. Coordination and supervision of public meetings and training courses for students. 3. Coordination of the closing ceremony of student activities in the department. 4. Organizing scientific trips for students to scientific institutions and factories. 5. Prepare a database of institutions and companies within the Kingdom that can be used Provide training opportunities for students. 6. Preparing and organizing the committee's file. |
| 6- Appeal and Complaints Committee | Mongi Ben Moussa Zineb Matar Atef Ismail Mouna Mahseb Ibtihel Thbiti Abir Srihi | <ol style="list-style-type: none"> 1. Receiving complaints from students. 2. Consideration of student grievances and complaints. 3. Follow the university regulations. 4. Submitting proposals to the Head of Section on grievances and complaints. 5. Prepare and organize the committee's file. |
| 7- Postgraduate Studies Committee | Saud H Allehyani Ameenah Alahmadi Issam Al-Ahdali Fatma Alsaiid Khaled Abdel-Waged Thamer Alomary Fahad Alhasmi Alamar | <ol style="list-style-type: none"> 1. Review and develop plans for graduate programs. 2. Preparing a comprehensive vision and proposing internal regulations for postgraduate studies Section. 3. To conduct admission tests for applicants for postgraduate studies and to nominate the proposal Admission to the program. 4. Studying proposals for the registration of Master's. 5. Proposing research topics related |

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| | Walid Belhadj | <p>to reality and the environment for their application through graduate programs in the department.</p> <p>6. Distribution of students to supervisors and follow up supervision of messages and receive annual reports from supervisors.</p> <p>7. Academic guidance for graduate students.</p> <p>8. Preparation and organization of graduate files.</p> |
| 8- Scientific research Committee | <p>Ahmed Alhikami</p> <p>Rabeb Sindi</p> <p>Thamer Alomayri</p> <p>Afef Mouawdth</p> <p>Jalel Ouerfelli</p> <p>Saleh Alluqmani</p> <p>Ali S Alshomrany</p> <p>Mohamed Al Turkestani</p> | <p>1. Inventory of scientific equipment and research laboratories in the department.</p> <p>2. Determine and prioritize the equipment and materials needed for scientific research.</p> <p>3. Studying offers and receiving orders.</p> <p>4. Organizing scientific workshops and seminars.</p> <p>5. Prepare an annual report on the scientific publication in the department and the research groups and the research potential available to help of the Research Statistics coordinator.</p> <p>6. Coordinate and follow up the work of the research groups.</p> <p>7. Preparing and organizing the committee's file</p> |
| 9- Quality Assurance & Academic accreditation | <p>Issam Al-Ahdali</p> <p>Ameenah Alahmadi</p> <p>Samir Natto</p> <p>Doaa Mahmoud</p> <p>Khaled Abdel-Waged</p> <p>Nuha Flomban</p> | <p>1.Coordination with the Faculty administration and the University for development of the departments to complete the process of academic accreditation.</p> <p>2. Spreading the culture of quality among the different categories and informing the members of the teaching quality standards.</p> |

| | | |
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| <p>Committee</p> | <p>Roshdi Saeoudi Ameni Alaoui Hatem Alamri Fahad Alhasmi Alamar Waleed Altef</p> | <p>3. Coordination with the other committees in the department. 4. Follow up and receive reports of quality reports and provide feedback. 5. Preparing the report of the self-study of the programs . 6. Provide recommendations and proposals to improve the quality of outputs of academic Programs. 7. Prepare and organize the committee's file.</p> |
| <p>10- Measurement and Evaluation Committee</p> | <p>Hosam Salaheldin Doaa Mahmoud Abdelrahman Lashin Afef Mouawdth</p> | <p>1. Prepare a plan of action for measurement and evaluation 2. Preparation of questionnaires and tools to measure performance indicators at a periodic rate commensurate with the nature of the indicator 3. Compilation of all questionnaires and documentation for quality, measurement and evaluation and electronically saved on a site available to everyone 4. Communicate continuously with the other committees to provide them with the documents that need it. 5. To propose standard forms for the final tests and distribute them to members. 6. Receive the course reports and the contents of the course file. 7. Analysis of the results of measurement and evaluation tools 8. Prepare and organize the committee's file.</p> |
| | <p>Saud H Allehyani Ameenah Alahnmedi</p> | <p>1. Determine the needs of the department in different disciplines 2. Receipt of applicants' papers</p> |

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| <p align="center">11- Employment Committee</p> | <p>Hatem Alamri Mohamed Al Turkestani Ahmed Alhikami Thamer Alomayri</p> | <p>3. Check the papers and verify the authenticity of the certificates 4. Proposing methods and methods for making fair trade between applicants 5. Work a report containing a recommendation to approve or not to accept applications for recruitment, contracting, transportation or recruitment of faculty members. 6. Preparing and organizing the committee's file</p> |
| <p align="center">12- Promotion Committee</p> | <p>Issam Al-Ahdali Ameenah Alahmadi Samir Natto Zineb Mtar Faiz Alghorabie Fatma Alsaiid Hatem Alamri</p> | <p>1. Receipt of papers and scientific research from the applicants. 2. Examination of scientific papers and verifying compliance with the conditions and procedures before submitting them to the Board of the Department 3. To make a recommendation and submit it with the papers to the head of the department council 4. Preparing and organizing the committee's file</p> |
| <p align="center">13- Alumni and scholarships Committee</p> | <p>Badie Korany Nuha Alharbi Khaled Althakafi Denia Sindi Abdelmajid Timoumi Arwa Boukhari Atef Ismail Hanan Amer Mushael Harbi</p> | <p>1.Preparing an electronic database for graduates and graduates, including the name and E - mail, telephone, communication methods and location occupied by the graduate. 2. Preparation of an electronic database for students and scholarships including the name E-mail, telephone, country of study and university 3. Follow-up of students and scholarships and all related procedures. 4. The work of the files of the students and scholarships contains a</p> |

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| | | <p>copy of the decision to be appointed Scholarship in the university , a copy of the latest scientific qualification, image of National identity, a copy of the family card for married, a picture of Executive decision for scholarship, university name, supervisor, specialization and the year of scholarship.</p> <p>5. Prepare a database in the areas where the graduates work.</p> <p>6. Preparing the Graduates Guide.</p> <p>7. Prepare and organize the committee's file</p> |
| <p>14- Occupational Health & Safety Committee</p> | <p>Ahmed El-Hadi Hanan Amer El Hussieny El Taher Nuha Alharbi Mohamed Boustimi Zakia Kthiri</p> | <p>1. Observance of occupational safety and health standards.</p> <p>2. Examine the causes of accidents.</p> <p>3. Provide suggestions for the development of plans and programs for safety services and occupational health</p> <p>4. Spread the culture of safety, health and occupational health between students and employees section.</p> <p>5. Supervise the existence and validity of occupational safety and health tools Inside the halls and laboratories.</p> <p>6. Preparing guidance plates for laboratories and emergency exits.</p> <p>7. Supervise the implementation of the evacuation plan.</p> <p>8. Prepare and organize the committee's file</p> |

6.1 Assessment

6.1.1: Assessment of Program Educational Objectives (PEOs)

Program Educational Objectives (PEOs) are broad statements describing the achievements the graduates from the Physics Program should attain few years after graduation program specification. The reviewing and revising process of the program educational objectives follows the way they were constructed and is launched every three years. The process used to establish and review the current Program Educational ([Appendix PHYS07, and 08](#)).

Objectives and Program Outcomes as well formally began with discussions in the department council (Faculty meeting). The academic members and administratives began training to learn about the Accreditation Criteria and processes. The purpose was to redefine (if needed) the program educational objectives and outcomes, and to establish assessment and continuous quality improvement processes in accordance with the accreditation criteria. The process involved the following steps:

1. Review of the University's, Faculty's, and Department's mission statements.
2. Program objectives linked to the department's mission statement.
3. Discussion the program's with curriculum committee external board meetings, at Student Board meetings, then annual Faculty retreats. PEOs will be assessed using the adopted discussions.
4. Department's Quality assurance committee gathers motivated proposals to modify the program objectives (as needed). These proposals are presented to the department council for discussion and decision for the final form of the program educational objectives ([Appendix PHYS12](#)).
5. If modifications are approved, the department's Faculty will determine the appropriate implementation of the approved proposal whether through, program outcomes modification, and/or curriculum modification.
6. Assessment committee will have to develop the right assessment tool to assess the new PEOs to take them into consideration during the next PEOs assessment.

It should be mentioned that the review process of the PEOs is conducting every four years. Figure 6.1 illustrates the process for revision of the Program Educational Objectives.



Figure 6-1 Process for Revision of the Program Educational Objectives

Evidence that will be available to show achievement of this process will include:

- Published Program Educational Objectives (bulletin, brochures, posters, web page, etc.).
- Description of the curriculum and courses that meet these objectives.
- Minutes of department council
- Minutes of different departmental committees concerned the PEOs.

6.1.2: Assessment of Program Learning Outcomes (PLOs):

To ensure that graduates of the Physics Program satisfy the Program Learning Outcomes (PLOs), the curriculum must ensure achievement of each unique PLOs. Table 6.2 shows the coverage for each PLOs as it relates to each course in the Physics program.

Table 6 -2: The mapping between courses and the Program Learning Outcomes

| Course code | Course name | a1 | a2 | a3 | b1 | b2 | b3 | b4 | b5 | c1 | c2 | c3 | c4 | d1 | d2 | d3 | d4 | e1 | e2 |
|-------------|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 403101 | General physics101 | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403121 | Electricity and magnetism | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403102 | General physics102 | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403240 | Method in theoretical physics (1) | ☒ | ☒ | | | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403242 | Method in theoretical physics (2) | ☒ | ☒ | | | ☒ | ☒ | ☒ | | ☒ | ☒ | | | ☒ | | ☒ | ☒ | | |
| 403346 | Method in theoretical physics (3) | ☒ | ☒ | | | ☒ | ☒ | ☒ | | ☒ | ☒ | | | ☒ | | ☒ | ☒ | | |
| 403241 | Classical mechanics (1) | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | | |
| 403245 | Classical mechanics (2) | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | | |
| 403332 | Electromagnetism (1) | ☒ | ☒ | ☒ | | | ☒ | ☒ | | ☒ | | ☒ | | ☒ | ☒ | ☒ | ☒ | | |
| 403231 | Optics | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ |
| 403285 | Measurements and Instrumentations | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ |
| 403212 | Thermodynamic | ☒ | ☒ | | | | | | | | | ☒ | | | | | | ☒ | |
| 403342 | Electromagnetism (2) | ☒ | ☒ | ☒ | | | ☒ | ☒ | | ☒ | | | ☒ | ☒ | ☒ | ☒ | | | |
| 403344 | Quantum mechanics(1) | ☒ | ☒ | ☒ | | | ☒ | ☒ | | ☒ | ☒ | | | ☒ | | ☒ | ☒ | | |
| 403213 | Statistical thermodynamic | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | | ☒ | | | | ☒ | ☒ | ☒ | ☒ | | |
| 403361 | Nuclear physic (1) | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403345 | Quantum mechanics(2) | ☒ | ☒ | ☒ | ☒ | | | ☒ | ☒ | | ☒ | ☒ | | | ☒ | | ☒ | ☒ | |
| 403461 | Nuclear physics 2 | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | | | | ☒ | | ☒ | ☒ | | |
| 403423 | Electronics | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403371 | Solid state physics (1) | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | ☒ | | |
| 403383 | computing | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | | ☒ | | ☒ | ☒ | ☒ | ☒ |
| 403463 | Nuclear Technology | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | | | | ☒ | ☒ | ☒ | ☒ | | |
| 403472 | Solid state physics (2) | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | | | | ☒ | ☒ | ☒ | ☒ | | |
| 403432 | advanced Optics | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | | | | ☒ | ☒ | ☒ | ☒ | | |
| 403253 | Atomic physics | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | |
| 403471 | Semiconductors physics | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | ☒ | | |
| 403462 | Radiation Physics | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | | | ☒ | ☒ | ☒ | ☒ | ☒ | | |
| 403382 | Manufacturing and Workshop | ☒ | ☒ | ☒ | ☒ | | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ |
| 403493 | Research Project | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ | ☒ |

Figure 6.2 summarizes the process of assessing and revising the PLOs. The program learning outcomes is enriched, if necessary, by considering PEOs. In fact, the link and impact of Program educational objectives (PEOs) on program learning outcomes is studied to make sure that PLOs adopted serve all PEOs; if not, additional PLOs can be added or integrated with the list established based on ASIIN requirements. The attainment of PLOs is conducted using different means including course assessment (direct and indirect). The assessment of PLOs leads to a list of improvement actions; these actions are implemented during the following semester (s). The assessment of PLOs can lead to changes in the curriculum. If this is the case, the curriculum is updated with the required changes. The assessment process of PLOs continues to evaluate the efficiency of the changes done.

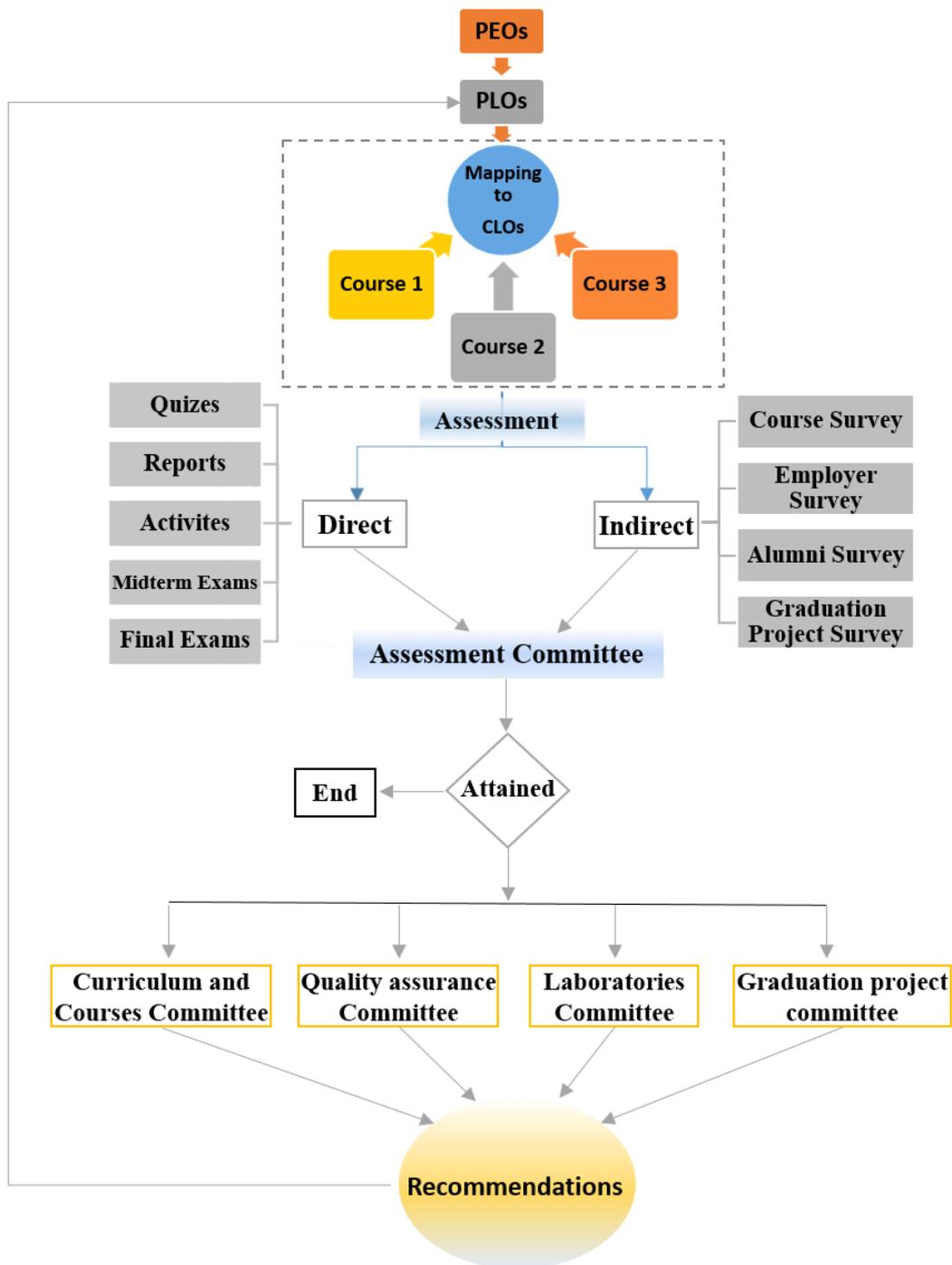


Figure 6-2: the process of assessing and revising the PLOs

6.1.3: Assessment of course learning outcomes:

Each course has a set of outcomes called “Course Learning Outcomes” or CLOs which are the basis of all direct assessments of PLOs. The CLOs of a course describe the abilities to be attained at the end of the course. The curriculum

committee is responsible for updating and revising the CLOs based on the recommendations of the Course Coordinators. For Physics Program, the CLOs are part of the syllabus and are published for students and the Faculty in course handbook. PLOs are linked to the CLOs of various courses through the CLO-PLO mapping, therefore, if the CLOs are attained to the required level of satisfaction, the relevant PLOs are assumed to be attained to the required level of satisfaction.

The process for preparing and approving assessment of course learning outcomes will involve the following steps ([Appendix PHYS07](#), and [08](#)):

1. A couple of weeks before the beginning of the semester the instructor of each course being informed by sending a reminder message about the need to carry out an assessment that semester. This message includes simple instructions for the assessment process (direct and indirect methods).
2. Each instructor carries out the assessment plan during the semester.
3. At the end of the semester, each instructor is sent a reminder message to prepare a course report. This message includes a template of course report.
4. Course report and results are archived electronically and/or in hardcopy and a copy is added to the course folder.
5. Course report should contain both direct assessment (using quizzes, exams, assignments, etc.) and indirect assessment (through surveys).
6. In addition to the raw assessment data, Course report includes analysis and interpretation of the results.
7. All Faculty members are required to maintain the record of the students' data (marks of the student in every assessment method, what percentage of outcome has every student achieved in that assessment method etc.) in the form of a matrix in the provided Excel sheet template.
8. Assessment is to be based mainly on the percentage of students achieving the satisfactory-exemplary levels for a specific program learning outcome instead of the average score of all students in a specific outcome.

The following is a brief description of the process used in assessing and evaluating Physics Program PLOs ([Appendix PHYS14](#) and [UQU15](#))

☛ Direct assessment

- Assessment tools:
 - The actual attainment levels of students in a course through exams, quizzes and assignments.
- Evaluation method:
 - Define Levels of attainment of PLOs for evaluating student's direct assessment results.
 - Tabulate and Display PLOs Achievement based on student's direct assessment results
 - Comment on PLOs assessment

☛ Indirect assessment

- Assessment tools:
 - Course survey
- Evaluation method:
 - Define Levels of Attainment of PLOs for evaluating indirect assessment survey.
 - Tabulate and Display PLOs Achievement based on Indirect Surveys
 - Comment on PLOs assessment

Analysis and interpretation of the assessment results:

The attainment of learning outcomes is usually judged primarily by using the percentage of students achieving a predefined set of attainment levels and should not be judged by using the average score of all students in a specific outcome. The average score can be used as additional and informative only.

We use the following attainment levels:

For direct assessment:

- **Unsatisfactory:** $0 \leq \text{score in a specific outcome} < 60 \%$,
- **Developing:** $60 \% \leq \text{score in a specific outcome} < 70 \%$,
- **Satisfactory:** $70 \% \leq \text{score in a specific outcome} < 90 \%$,
- **Exemplary:** $90 \% \leq \text{score in a specific outcome} \leq 100 \%$.

For Indirect Assessment:

- **Unsatisfactory:** corresponds to **Disagree + Strongly Disagree** in a specific outcome.
- **Developing:** corresponds to **Neutral** in a specific outcome.
- **Satisfactory:** corresponds to **Agree** in a specific outcome.
- **Exemplary:** corresponds to **“Strongly Agree”** in a specific outcome.

The final judgment of the attainment of program learning outcomes is based on the followings levels:

Table 6-3: Levels of attaining the PLOs

| Exceeds Expectations | Meets Expectations | Progressing Towards Expectations | Does Not Meet Expectations |
|--|--|---|---|
| 80 % or more of students are achieving the satisfactory level | 70 % to less than 80 % of students are achieving the satisfactory level or a | 60 % to less than 70 % of students are achieving the satisfactory level | Below 60 % of students are not achieving the satisfactory level |
| Continue the good work | Aim to improve | Attention is required to some issues | Immediate Action is required to resolve issues |

The analysis of the assessment results must be oriented towards:

- Identifying the reasons, issues, and root causes behind the non-attainment of a specific outcome.

- Determining actions to be taken in the following semester to resolve these issues.

6.2: KPI's and Benchmarking:

The physics department has embarked upon constituting assessment committee for to develop a set of practical procedures, measures and administrative arrangements for conducting the process of identifying pattern and key performance indicators (KPIs) in various fields of activities and defining major tasks at the department level and configuring them for use in further improvement. Also, conducting benchmarking for indicators met with the leading national and international universities. Work is underway to provide reference benchmarks by which to compare the levels of performance and quality of physics program with those of the national and international universities. The following tools, scales and documents have been used to measure the KPIs ([Appendix PHYS17](#), and [18](#)):

Analysis of the following surveys:

1. Course Evaluation Survey (CES).
2. Program Evaluation Survey (PES).
3. Student Experience Survey (SES).
4. The opinions of Faculty, researchers and graduate students in scientific research institutes at the University.
5. Evaluating the academic program by Faculty members survey.
6. Evaluating Faculty members for learning resources available to the program.
7. Assessing the quality of services and student activities.
8. The program's vision, mission and objectives (Faculty members).
9. The program's vision, mission and objectives (students).
10. The opinion of graduates after graduation at least six months in the quality of the program.
11. Opinion recruiters in Faculty graduates.

- 12.Measuring satisfaction teaching facilities and equipment for staff members
- 13.Measuring satisfaction of senior management for facilities and equipment
- 14.Measuring student satisfaction for facilities and equipment
- 15.The extent of job satisfaction for employees
- 16.Student opinions about registration and Academic Advising services
(Appendix PHYS19, 20, 21, and 22).

17.These surveys are available online at the link:

<https://uqu.edu.sa/applied-sciences/ar/93235019>

- ☉ Collecting quantitative data and statistics related to key performance indicators were obtained through the Deanship of Information Technology, Deanship of Faculty and Staff Affairs, Deanship of Admissions and Registration.

6.3: Alumni:

An Alumni Committee was established and tasked with keeping ties with Alumni through social Medias. The Alumni committee has been communicating with alumni through, a meeting for alumni, and social media; twitter, Facebook, and Instagram (<https://uqu.edu.sa/page/ar/93234461>)

Also, the alumni committee writes annual report about alumni including their databases, information about their careers, and all other statistical data are available and published via this report on the department website:

<https://uqu.edu.sa/page/ar/93234454>

Alumni survey is done at an interval of two years. The survey has other purposes but one of the objectives is to obtain the opinion of the alumni about how they found themselves in the abilities relevant to the PLOs at the time of graduation
([Appendix PHYS23](#)).

6.4: Program Development:

Continuous development is something very significant in the Physics Program. For the last five years, there have been continuous developments on various fronts including the curriculum, the assessment processes, academic advisement, facilities, graduation project quality and assessment, etc. The whole process of development itself is being improved to obtain a highly sustainable system of assessment, evaluation and improvement. The processes used for evaluating the program learning Outcomes were described in Section 6.1 ([Appendix PHYS24, and 25](#)).

We should also mention that modifications in the curriculum has been made, and all statistical data in this SSR is for the study plan 19 ([Appendix PHYS04](#)), following is a list of improvement plans based upon the recent evaluations:

1. An updated plan 33 is running since 2012 ([Appendix PHYS26](#)). The newly admitted students for undergraduate study has to go through a one year Pre University Qualifying Year Program where students takes English, Communication Skills, IT, Mathematics and courses related to the Physics program. According to UQU, the Pre University Program is part of the physics program ([Appendix PHYS26](#)).
2. A new curriculum (plan 37) has been started during 2016-2017 academic year. Plan 37 does not require the newly admitted students for undergraduate study to go through a one year Pre University Qualifying Year Program ([Appendix PHYS27](#)).
3. Graduation Project processes and assessments are being improved gradually. Assessment processes have already been implemented. Further enhancements in processes have been proposed and will be presented to the department council at the beginning of the next academic year ([Appendix: PHYS11](#)).

4. From the evaluations and discussion, it appears that some students in several courses need tutorials. Therefore, the Department will start offering tutorial sessions to selected courses. More courses will be added where tutorial sessions will be offered for students to enhance their learning.
5. At present, the female section of Physics department is using a temporary location at Al-Zaher girl campus. A new building for the female section of Faculty of Applied Sciences Systems has been constructed. Before moving to this new building, the department is ensuring that it fulfills all the requirements of Physics education such as safety, spacious classrooms and state of the art laboratories.

6.5 Appendices:

Umm Al-Qura University

[UQU15: New Teacher's Quality Manual](#)

Physics Program

[PHYS04: Program Handbook Plan 19](#)

[PHYS07: Program Specification](#)

[PHYS08: Study Plan 19](#)

[PHYS11: Graduation Project Guide](#)

[PHYS12: Physics Department Committees 2017](#)

[PHYS14: Annual Program Report](#)

[PHYS16 Laboratories Handbook](#)

[PHYS17: Course Report](#)

[PHYS18: Course Specification](#)

[PHYS19: Questionnaire about student examination](#)

[PHYS20: Program Evaluation](#)

[PHYS21: Experience Evaluation](#)

[PHYS22: Course Evaluation](#)

[PHYS23: Alumni Questionnaire](#)

[PHYS24: Benchmark1](#)

[PHYS25: Bechmark2](#)

[PHYS26: Handbook Plan 33](#)

[PHYS27: Study Plan 33, 37](#)

7. SSR Appendices:

[UQU01: The Statute of the Council of Higher Education and Universities](#)

[\(University Act\).](#)

[UQU02: Government Decree on Umm Al-Qura University and Faculty of Applied](#)

[Science.](#)

[UQU03: Admission Guide in Umm Al Qura University for the Academic Year 1437 / 1436 H](#)

[UQU04: Rules of Study and Examinations of Higher Education in Umm Al-Qura University](#)

[UQU05: Right and Duties of the Student Regulations for Students in Umm Al-Qura University](#)

[UQU06: Strategic plan in Umm Al-Qura University](#)

[UQU07: National Qualification Framework \(NQF\)](#)

[UQU08: Quality Guide for Studying and Learning](#)

[UQU09: Enrollment Registration Deanship Guide](#)

[UQU10: Quality Guide for Studying and Learning](#)

[UQU11: Student Handbook](#)

[UQU12: The general rules of E-learning at Umm Al-Qura University](#)

[UQU13: General Rules of E-learning within KSA](#)

[UQU14 Library profile Abdul Aziz university library](#)[UQU15: New Teacher's](#)

[Quality Manual](#)

[UQU15: New Teacher's Quality Manual](#)

[PHYS01: Department Guide.](#)

[PHYS02: Consistency between University & College Missions](#)

[PHYS03: Consistency of Collage and Department Missions](#)

[PHYS04: Program Handbook Plan 19](#)

[PHYS05: Consistency between LOPs Learning Outcomes of Physics](#)

[Program and ASIIN Requirements](#)

[PHYS06: The European Credit Transfer Accumulation System ECTS](#)

[PHYS07: Program Specification](#)

[PHYS08: Study Plan 19](#)

[PHYS09: Attendance Certificate](#)

[PHYS10: Certificate of Bachelor of Physics](#)

[PHYS11: Graduation Project Guide](#)

[PHYS12: Physics Department Committees 2017](#)

[PHYS13: Academic Advising](#)

[PHYS14: Annual Program Report](#)

[PHYS15: Staff Handbook for Physics 1437/1438](#)

[PHYS16 Laboratories Handbook](#)

[PHYS17: Course Report](#)

[PHYS18: Course Specification](#)

[PHYS19: Questionnaire about student examination](#)

[PHYS20: Program Evaluation](#)

[PHYS21: Experience Evaluation](#)

[PHYS22: Course Evaluation](#)

[PHYS23: Alumni Questionnaire](#)

[PHYS24: Benchmark1](#)

[PHYS25: Benchmark2](#)

[PHYS26: Handbook Plan 33](#)

[PHYS27: Study Plan 33, 37](#)