

Ministry of higher education
Majmaah university
College of Science
Department of Physics



وزارة التعليم العالي
جامعة المجمعة
كلية العلوم
قسم الفيزياء

Self-Study Report

www.mu.edu.sa

Kingdom of Saudi Arabia
Ministry of Higher Education
Majmaah University
College Of Sciences
Department of Physics



المملكة العربية السعودية
وزارة التعليم العالي
جامعة المجمعة
كلية العلوم
قسم الفيزياء

SELF-STUDY REPORT



PHYSICS PROGRAM

PHYSICS DEPARTMENT

ZULFI COLLEGE OF SCIENCE

MAJMAAH UNIVERSITY

2013-2014

Contents

1- Formal Specification.....	4
1.1 About Majmaah University, Zulfi College of Science and Physics Program.....	6
1.2 Type of Education	7
1.3 Final Degree	8
1.4 Standard period of study and credit points gained	8
1.5 Expected intake for the program.....	9
1.6 Program start date within the academic year and first time the program is	9
1.7 Amount and type of charges	9
2 Degree Program: Content, Concept and Implementation.....	11
2.1 Aims of the program of studies.....	11
2.2 Learning outcomes of the program	12
2.3 Learning outcomes of the Courses	13
2.4 Job market perspectives and practical relevance.....	14
2.5 Admissions and entry requirements	15
2.5.1 Entry requirements for Bachelor’s degrees.....	15
2.5.2 Curriculum/content	16
3 Degree Program: Structures, Methods and Implementation	18
3.1 Structure and modularity.....	18
3.1.1 Elective studies and practical training in Physics Program.....	18
3.1.2 Workload and credit points	19
3.1.3 Workload and credit points in Bachelor’s Degree.....	19
3.2 Educational methods.....	20
3.3 Support and advice.....	21
4 Examinations: System, Concept and Organization	24
4.1 What is assessment?	24
4.2 Process and Steps in Assessment:	24
4.3 Assessment Plan of College of Science.....	24
4.4 Components of College of Science Assessment Plan	25
4.4.a Program Assessment Plan.....	25
i. Assessment of extent of achievement of terminal program objectives	25
ii. Assessment of Program Effectiveness	25
4.4.b Plan for Assessment of achievement of College of Science.....	25
4.4.c Types of Assessment.....	26

i. Direct Assessment:	26
ii. Indirect Assessment: Assessments:	27
4.5 Program Assessment	28
4.5.1 Concept:.....	28
4.5.2 Objectives of Program Assessment	28
4.6. Program Development process at College of Science:	28
5 Resources	30
5.1 Staff involved	30
5.2 Staff development	30
5.3 Institutional environment, financial and physical resources.....	31
5.3.1 Institutional environment description of the institution	31
5.3.2 Committees responsible for teaching in the degree program	31
5.3.3 Physical Resources.....	32
5.3.4 Computer facilities.....	32
5.3.5 Library.....	33
5.3.6 Laboratories.....	34
6 Quality Management and Further Development of Physics Program	38
6.1 Quality assurance and further development.....	38
6.2 Comment and General Description of Quality Assurance.....	39
6.3 The QM Unit Tasks:	40
6.3.1 The core tasks of the Units are:	40
6.3.2 Contact officials and information sources:	40
6.4 Quality assurance at Physics Program	40
6.5 Instruments, methods and data	41
6.5.1 Monitoring of credits	42
6.5.2 Courses Development	43
6.6 Evaluation of the success of the degree program	45
6.6.1 Competence of graduates.....	45
Quantitative results of a degree program	46
Staff-student ratio	47
Satisfaction in the education.....	47
7 Documentation and Transparency 49	
7.1 Relevant regulations	49
7.2 Diploma Supplement.....	49
8 Equal opportunities and diversity 50	

8.1	Services to students and graduates	50
8.2	Access to guidance services	50
8.3	Countering discrimination	50
8.4	The College's Commitment	51
8.5	Responsibilities	51
8.5.1	College's Council.....	51
8.5.2	Departments.....	52
8.5.3	The Domestic Bursar.....	52
8.5.4	All staff and students	52
8.5.5	Complaints.....	52
8.6	Corrective Procedures	53
8.6.1	Discipline.....	53
8.6.2	Monitoring.....	53
8.6.3	Positive Action	53
Appendices:.....		55

List of Tables and Figures

Table 2.1: The program learning outcomes according to the NCAA domains.....	12
Table 2.2: The compulsory and elective course.....	14
Table 3.1: Grade distribution	18
<u>Table 3.2. Workload per semester of study and periods; Physics Program</u>	19
<u>Table 3.3. Workload per year of study and periods; Physics Program</u>	20
<u>Table 3.4. Academic Guidance Methods</u>	21
<u>Table (4.1): Types of evaluation methods</u>	26
<u>Table (4.2): Courses distribution Grads</u>	27
<u>Table 5.1. Staff Contributing to the Degree Program (2014)</u>	30
<u>Table (6.1) : Calculating the grade of the first semester</u>	43
<u>Table (6.2): Calculating the grade of the second semester:</u>	43
<u>Table (6.3). Course feedback in physics</u>	44
<u>Table (6.4). The grades of the Project Thesis in 2014</u>	45
<u>Table (6.5). Final grades of the graduates:</u>	45
<u>Table (6.6): Number of graduate during the years 2010 - 2014</u>	46
<u>Table (6.7): The graduate employ ratio</u>	46
<u>Fig (6.1): Employed and unemployed ratio</u>	47
<u>Table (6.8). Students per teacher per year Zulfi College of science Physics Department</u>	47
<u>Table (6.9). Feedback from graduated B.Sc. of Science in (2011 -2014)</u>	47

1- Formal Specification

Name of the programme (original language)	بكالوريوس العلوم (فيزياء)
Name of the programme (English translation)	B.Sc. in Physics
Final degree	Bachelor of Science
Standard period of study	4 years , 8 semesters
Credit points (according to ECTS)	137 credit hours
Type (several can be indicated)	Full time
Website of the Higher Education Institution	www.mu.edu.sa
(first time) programme start date within the academic year	17/5/2005 (8/4/1426)
Intake rhythm	Fall semester
Expected intake number of students	110 students
Amount and type of fees/charges	Free of charge
For the AC-Seal (Germany): classification as consecutive/further education (for Master's degree programmes)	consecutive/further education / n.a.
For the AC-Seal (Germany): (optionally only for Master's degree programmes)	application/research orientation/n.a.
College/Department	Zulfi, Faculty of Science-Physics Department
Official contact person for publication on the web	Dr. Thamer Al-Harbi
Telephone	00 966-16-404-4135
E-Mail	t.alharbi@mu.edu.s
Fax	00 966-16-404 40 44
Mail	KSA - Zulfi 11932 College of Science in Zulfi Po.Box:1712
Re-accreditation	No
Last accreditation issued by	No
Duration of the last accreditation	

1.1 About Majmaah University, Zulfi College of Science and Physics Program

The establishment of Majmaah University, which is deemed as a newly established one, came as a result of the decree of the Custodian of the Two Holy Mosques King Abdullah Bin Abdul Aziz Al-Saud and the Prime Minister and Chairman of Higher Education on Ramadan 3rd, 1430 - 24th of August, 2009 to establish Majmaah University along with three other universities in Dammam City, Kharj province and Shaqr’a province.

Majmaah University slogan is comprised of three integrated parts that are based on golden ground. The golden color in the slogan represents the desert of the Kingdom of Saudi Arabia where the Islamic dau’a has started.

Earth
The sign of earth in the slogan represents the tendency of the University to be an international renowned institution.

Leafs of Palm
The three leaves of palm to the right side represent the three phases of the Saudi country.
The selection of palm’s leaf is due to its importance as a crucial source for the nutrition and economy of people in this region. The gradation of the dark green color to the light green color refers to the knowledge that the University intends to disseminate in the region.

Book Pages
The book pages to the left side represent the knowledge that the University intends to disseminate in the region. It also represents the future vision of the University to be a source of knowledge for all students.

Majmaah University is established to serve a wide area including Majmaah, Zulfi, Remah, Ghat and Hawtat Sudair. It will also help in achieving the Ministry of Higher Education’s objective in expanding the university education across the country. Therefore, Majmaah University will meet the growing number of high school graduates in the region which will reduce the pressure on universities in big cities. Another significant reason for the establishment of Majmaah University is the value it will add to the people of the region in various aspects including social, cultural and awareness service. Inevitably, this shall help in upgrading the level of performance appraisal of government sectors via

providing advanced courses and consultations. With regard to scientific research, the University will provide programs of high quality that will be in compatible with the University strategic objectives.

The royal decree no: 194/A on Zul Hejjah 30th, 1430 – 17th of October, 2009 to appoint Dr. Khalid Sa'ad Al-Mugren as the Rector of Majmaah University with higher rank accelerated the development process at the University. Dr. Al-Mugren focused on developing the existence colleges as well as building new ones in order to increase the number of majors that will meet the market demands. The concern of Dr. Al-Mugren is to make Majmaah University a beacon of knowledge and enlightenment that is capable of offering education of high quality.

The site of execution of the Degree Program in Physics is the Department of Physics at Zulfi, College of Sciences, Majmaah University. The Department of Physics belongs to the Zulfi, College of Sciences that operates under the administration of Majmaah University.

Zulfi, college of Sciences brings together the Physics related education and research at Majmaah University. Zulfi, college of Sciences coordinates three degree programs: *Physics*, *Mathematics*, and *Computer Sciences*. Majmaah University is one of the largest education and research organization in Kingdom of Saudi Arabia (KSA).

1.2 Type of Education

Course, the education context, is a word for which the meaning varies depending on which country it is used in. In higher education in KSA, a "course" refers to the entire program of studies required to complete a university degree. a "course" is a unit of teaching that typically lasts one academic term, is led by one or more instructors (teachers or professors), and has a fixed roster of students (Curriculum). It usually describes an individual subject taken. Students may receive a grade and academic credit after completion of the course over a year or semester.

Typically, KSA universities require students to achieve both breadth of knowledge across disciplines and depth of knowledge in a particular chosen subject area, known as a compulsory. Thus, students of the Science are required to take some education courses, and vice-versa. Normally, students are free to choose their particular electives from among a wide range of courses offered by their university, as long as the students possess the prerequisite knowledge to understand the subject matter being taught. English major, for example, might also study one or two semesters of physics as well as mathematics and a foreign language. All the courses details are given in the module descriptions available in the study guides. 75% of attending lectures is compulsory, since attendance facilitates passing. Courses use study and teaching portals smart board and whiteboard which facilitate self-study and make distance learning a possibility.

Department elective course is one chosen by a student from a number of optional subjects or courses in a curriculum, different to a required course which the student must take. While required courses (sometimes called "core courses" or "general education courses") are deemed essential for an academic degree, elective courses tend to be more specialized. Elective courses usually have fewer students than the required courses.

Elective courses are also offered in the third and fourth years of university, though the choice is more restrictive and will depend upon the particular major the student has chosen.

1.3 Final Degree

The degrees to be awarded are Bachelor of Science (PHYS) in Physics. The Universities Act M/8 (2685/23) at 1994 ([Appendix MU 01](#)) and the Government Decree on University Degrees (9683 /MB) at 2005 ([Appendix MU 02](#)) grant the right to award these degrees to Majmaah University, Zulfi College of Science, Physics Department.

The basis of the Bachelor of Science in Physics degree is the traditional preparation of a student for graduate study in physics.

Each of the Bachelor program contains the following:

1. Courses needed to meet general University degree requirements;
2. courses needed to improve the graduate language and skills
3. a core of technical courses intended to give a strong background in mathematics and the physical principles of mechanics, electricity and magnetism, thermodynamics, and the quantum theory that governs physical phenomena at the microscopic level of molecules, atoms, and nuclei;
4. Technical electives that enable the student to explore areas of his or her choice in greater depth;
5. Project that enable the student to explore areas of involving undergraduate research.

Students should contact their academic advisor for assistance in planning programs of study with emphasis directed toward a particular objective. Since some students who earn a degree in physics have transferred from other disciplines, the department has planned its degree programs to enable most students to transfer into physics with little or no loss of credit. A total of 137 credit hours are requisites for the bachelor's degree in physics ([Study Plan](#) and [Diploma Supplement](#)).

1.4 Standard period of study and credit points gained

The extent of studies required for Bachelor degree is 137 credit hour KSA systems (240 ECTS credits).

The university must arrange the education to enable the student to complete his degree of full-time study ([Appendix MU 02](#)).

- (1) In order to be awarded the Bachelor Degree, students have to achieve 240 ECTS credit points including the recognition of prior learning at one of the Colleges of Science. One ECTS credit point is equivalent to a workload of 25 - 30 hours. Workload indicates the time students typically need to complete all learning activities (such as lectures, seminars, projects, self-study and examinations) required to achieve the expected learning outcomes. The total workload of the four year study program is **5895** working hours. (ECTS: European Credit Transfer and Accumulation System) .
- (2) In the study program, the following student performance is required:

Education Categories	Total of Credit	Percentage of Credit	ECTS
English Skills	14	10.2%	25
Computer skills	3	2.2%	5
Mathematics Science	18	13.1%	32
General Educations	18	13.1%	32
Physics Courses	81	59.2%	141
Bachelor's Project	3	2.2%	5
Total	137	100%	249

(3) The overall distribution of credits and their measurement in presence and self study working hours is shown in the [Study Plan](#) and [Student workload](#).

1.5 Expected intake for the program

Faculty council makes a proposal to the rector on the student intake for faculty degree program. The number of the expected intake through joint application is defined between the rector and the degree program on yearly basis. The expected intake has been constant, is 150 each year see table-1.

There are several separate variants of entrance to the B.Sc. degree program. The Bachelor's degree program includes applicants who have succeeded in specific competitions in the fields of Physics and natural sciences.

Table 1.1: Expected intake of students

	Expected intake	Actual intake
2014	150	25
2013	150	30
2012	150	25

1.6 Program start date within the academic year and first time the program is

Education directed to Physics has been offered since the college was founded in 2006. During the first years, the education was part of the studies in the Department of Physics. The academic year of the university starts on mid-August and ends on mid-June. The academic year is divided into three semesters. The autumn semester, the spring semester and the summer semester each semester contain fifteenth weeks except summer semester (7 weeks with double contact hours per week). Physics Degree Program can be commenced once a year in the beginning of the academic year. The courses being offered are coordinated to ensure this.

The program duration is four years, eight semesters with a total of 137 credit hours (KSA).

1.7 Amount and type of charges

Education leading to a university degree and the entrance examinations relating to student admission shall be free of charge for the student ([Appendix MU 01](#)).

The students of Majmaah University must register each academic Semester.

APPENDICES:

- ***Majmaah University:***

MU 01. The Statute of the council of Higher Education and Universities (Univ. Act).

MU 02. Government Decree on Majmaah University.

- ***Physics Program:***

PHYS 04. Study Plan

PHYS 08. Student Workload

PHYS 13. Diploma Supplement (Example)

2 Degree Program: Content, Concept and Implementation

2.1 Aims of the program of studies

According to the High Education Ministry and serve of a wide area including Majmaah, Vision and Mission of Majmaah University are established. The vision and mission of the Majmaah University are described below:

Majmaah University is a conducive academic environment capable of providing graduates with promising future to contribute in achieving the sustainable development objectives.

Majmaah University Mission

Majmaah University provides educational and research services via an academic system that is capable of competing with an eye on the market demands and the society partnership.

Physics program mission reflect the mission of Zulfi College of Science which both mission are reflecting the mission of Majmaah University (Appendix [MPU01](#), - [MPU05](#)). The mission of the College and the program are:

Zulfi College of Science Mission:

Scientific excellence through affective plans and programs enable graduates to acquire the knowledge and skills needed to compete in the labor market.

Physics program Mission:

Providing a unique education and scientific research, to serve the community in building knowledge and skills in physics through conducive environment of learning, scientific research and society partnership.

The degree program in Physics offers the student's possibilities to acquire competences required in positions where Physical expertise is expected, within different operation sectors of the society. The objective of program is that the students will demonstrate adequate knowledge of various Physics branches (Appendix [PHYS 01](#) and [PHYS 02](#)).

The B.Sc. degree program in Physics provides the students with skills to consider the application possibilities of all Physics branches within various application sectors.

Central professional Goals include the following:

- G1: Conduct and develop distinct academic programs
- G2: Attract a world-class and diverse faculty members
- G3: Encourage the excellence of scientific research in Physics
- G4: Partnership with peers at regional and international universities.

G5: Provide the community with highly qualified competent.

The program objectives are discussed in the committee of the department and the student. These objectives are consistent with the program learning outcomes. The program learning outcomes are consistent also with ASIIN learning outcomes (*Appendix [PHYS 03](#), [PHYS 05a](#), and [PHYS 05b](#)*).

2.2 Learning outcomes of the program

Learning outcomes for B.Sc. Program in Physics are defined and published in the study guide and it is available on the Majmaah university website www.mu.edu.sa.

Professors of the B.Sc. Program in Physics and course teachers have participated in the definition of the learning outcomes. The requirements of the labor market are transmitted into the definition the learning outcomes of the degree program through research projects. Also the requirements of the post-graduate studies have been taken into account in the definition of the learning outcomes.

The correspondence of the ASIIN subject specific criteria and the learning outcomes of the B.Sc. Program in Physics have been examined in *Appendix [PHYS 05a](#)*.

An overview of the B.Sc. Program in Physics is compiled for curriculum analysis (*Appendix [PHYS 04](#)*) http://mu.edu.sa/sites/default/files/1/Zulfi/physics/PP_001_Study_Plan.pdf.

The Students learning outcomes of the B.Sc. Program in Physics are defined as follows. After the completion of the Bachelor's Degree Program in Physics the student have:

Table 2.1: The program learning outcomes according to the NCAAA domains.

Program Learning Outcomes		
Knowledge	a1	Knowledge of principles and concepts for specific core subject areas.
	a2	Match the principles and the concepts to analyze problems within specific core areas.
	a3	Aware of relevant knowledge and theory in other related disciplines and professional fields.
Cognitive Skills	b1	Discuss how to overcome educational problems.
	b2	Design and use valid Physics models in physical laboratories
	b3	Analyze and interpret quantitative results;
	b4	Dealing with the problems in Physics by using suitable mathematical principles.
	b5	Gains the skills of solving scientific problem related to industrial development plans in the kingdom.
	b6	Gain mental calculating skills and trains on it.
Interpersonal Skills & Responsibility	c1	<i>Work effectively in groups and exercise leadership when appropriate</i>
	c2	Familiarity with current developments in Physics.
	c3	Recognize life-long learning is a necessity as well as a responsibility of every Graduate.

Communication, Information Technology, Numerical	d1	Learn how to collect and classify the material for a course
	d2	Communicate effectively in oral and written form
	d3	Gain the skills to use the internet communicates tools.
Psycho-motor	e1	Employ software skills.
	e2	Use a perfect experimental tools to solve Physics problems

All students in the Bachelor's Degree Program in Physics have the same major subject, Physics.

2.3 Learning outcomes of the Courses

The learning outcomes of the program are put into practice within the individual courses of the program. The learning outcomes for individual courses are defined in the Program handbook ([Appendix PHYS 02](#)) which is available on the university web pages. The descriptions of learning outcomes of the courses are written by teachers of courses. Teacher's Quality Guidelines for Accreditation Preparation for Continuous Program Improvements handbook ([Appendix ZCS 02](#)) was used as help to describe knowledge, skills and competences acquired in the courses.

The contribution of the individual course in learning outcomes of the program is indicated in the Objective Matrix ([Appendix PHYS 03](#)). The courses' contribution within the learning outcomes of the program were classified in Levels **Introduction (I)**, **Proficient (P)**, and **Advanced (A)**. Teachers of the courses participated in the description and classification work ([Appendix PHYS 05a](#) & [05b](#)).

The B.Sc. degree in KSA is considered as a way to M.Sc. and Ph.D degrees studies, introducing students to the scientific thinking and methods. The B.Sc. degree starts with general studies, e.g. Mathematics and physics, the portion of which is significant in the first study year. According to ASIIN's criteria, the B.Sc. degree in Physics consists of ([Appendix PHYS 04](#)):

Education Categories	Total of Credit	Percentage of Credit	ECTS
English Skills	14	10.2%	25
Computer skills	3	2.2%	5
Mathematics Science	18	13.1%	32
General Educations	18	13.1%	32
Physics Courses	81	59.2%	141
Bachelor's Project	3	2.2%	5
Total	137	100%	249

Table 2.2: The compulsory and elective course

Program Study Plan				
Compulsory and elective requisites				
Requisite	Type of requisite	Total credit hours	Percentage of credit hours	ECTs
University	Compulsory	--	--	14
	Elective	12	8.75%	7
College	Compulsory	29	21.16%	51
	Elective	--	--	
Department	Compulsory	81	59.12%	142
	Elective	9	6.57%	16
Free courses		3	2.20%	5
Bachelor's Project		3	2.2%	5
Total hours and percentage		137	100%	240

The portion of elective studies is 8-10 %. The student may include any courses taught at Majmaah University in the elective studies.

2.4 Job market perspectives and practical relevance

The fields of education of the KSA universities are defined by the Ministry of Education. The Board of Majmaah University decides the total number of new entrants. The contents of the degree program are decided by College Council (*Appendix MU 09*).

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 industry. The industrial cooperation carried out in the research project provides a forum of information exchange about the needs and expectations of the industry regarding the education of Physics.

The amount of employees within the Physics field will increase during the next decade. The proportion of university graduates will increase, because the increasing information revaluations require new knowledge and skills in the companies within the application field (*Appendix ZCS 09*).

The courses in the Bachelor's Degree Program in Physics involve laboratory and project work as well as practical training in order to provide an adequate connection to the professional practice and to prepare the students to commence work in existing or foreseeable professional fields. The courses in the degree structure are also closely linked to the research conducted in the department and provide a path to post graduate studies.

Practical training is included in the Bachelor's program. The total value of obligatory practical training is 2 ECTS credits in the Bachelor's (*Appendix ZCS 05*).

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 is 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.

2.5 Admissions and entry requirements

2.5.1 Entry requirements for Bachelor's degrees

Saudi Universities Act (M/8 - 2685/23 at 1994) ([Appendix MU 01](#)) rules the entry requirements for the Bachelor's degree. According to the KSA Universities Act, the board of the university decides the number of new students to be selected each year. Rector decides annually the selection process and basis of the selection criteria of the prospective students after hearing the opinion of the faculties.

In practice student selection into the Bachelor's program for KSA secondary school examination graduates is mainly organized by a joint universities application system.

Prospective students applying in the Bachelor's degree in universities are:

- 1 He should have obtained a general high school certificate or its equivalent from within or without the Kingdom of Saudi Arabia.
- 2 His high school certificate or its equivalent should not be older than five years. The University Council may make some exceptions if convincing reasons are provided.
- 3 He should be of a good conduct.
- 4 He should successfully pass any test or interview assigned by the University Council.
- 5 He should be medically fit.
- 6 He should provide a permission for study from his reference, if he works in government or private sector
- 7 He should satisfy any other conditions the University Council determines, announced during application.
- 8 He should not be dismissed from any other university for disciplinary or academic reasons. If that became clear after his, his acceptance shall be deemed cancelled from the day of his admission.
- 9 A student dismissed from the University for Academic Reasons may be enrolled in some programs that do not award a Bachelor Degree, as decided by the University Council, or whoever it delegates. This shall not be allowed for the transitional program.
- 10 Those who already had obtained a Bachelor Degree or its equivalent shall not be admitted to obtain another Bachelor degree. The University Rector has the right for exceptions.
- 11 A student registered for another university degree or below, shall not be admitted, either in the selfsame university or another.

KSA University applicants have three different quotas where they can be selected in:

1. Success in secondary school examinations;
2. Success in secondary school examinations and in the entrance examinations; and
3. Success in entrance examinations.

The entrance examinations are organized by the joint application procedure. The entrance examination is based on the KSA secondary school curriculum in Physics, physics and Mathematics. There are three separate examinations; Prospective students must pass the entrance

examination to be selected even if there are fewer applicants than places attained. This guarantees minimum knowledge level in science of all selected students. There are no extra aptitude tests in the Bachelor's degree.

Students applying in the Bachelor's Program are not supposed to have any former work experience or industrial placements; neither do they help in the applying process for the Bachelor's Program.

Physics Bachelor's Program courses are fully taught in English, and thus very good English skills are required.

2.5.2 Curriculum/content

The target of the curriculum work process is the production of a high-level curriculum in terms of both content and communication. The curriculum lays the foundation for teaching and the planning (individual study plans) and implementation of studies. The Dean of the College and Heads of degree programs are responsible for the curriculum work ([Appendix PHYS 04](#)).

The curriculum work ensures the production of high-quality degrees: the expertise obtained from the degree studies is based on current, key research-based knowledge in the field of science in question, and on the development of general competencies as a part of the degree. The curriculum work takes into account the expertise required in the increasingly diverse and international world of work and the perspective of lifelong learning. Degree programs collaborate in curriculum work in order to secure synergy benefits as extensively as possible ([Appendix PHYS 01](#)).

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) follow regulations and are realistic ([Appendix PHYS 06](#)).

The process results in degree program and course descriptions, which are published annually in the study guide on the university web site. Publication is coordinated by the Student Affairs Office.

The quality of the process is evaluated by examining the curriculum process and degree program development. The quality indicators for the curriculum process are: the 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 ([Appendix ZCS 03](#)).

The executive group and the advisory group managed by the Head of the program make curriculum work processes in the program. The professors, study coordinator and students belong to the groups ([Appendix PHYS 04](#)).

APPENDICES:

- ***Majmaah University:***

- [*MU 01. The Statute of the council of Higher Education and Universities \(Univ. Act\).*](#)
 - [*MU 09. Enrollment & Registration Deanship.*](#)

- ***Zulfi, College of Science:***

- [*ZCS 02. Teacher's Quality Manual*](#)
 - [*ZCS 03. Quality Manual for Studying and Learning*](#)
 - [*ZCS 05. Project Handbook*](#)
 - [*ZCS 09. Alumni Unit Guide*](#)

- ***Physics Program:***

- [*PHYS 01. Program Specification*](#)
 - [*PHYS 02. Program Handbook*](#)
 - [*PHYS 03. Goals, Objectives and PLO Matrix*](#)
 - [*PHYS 04. Study Plan*](#)
 - [*PHYS 05a. Program Learning outcomes with ASIIN*](#)
 - [*PHYS 05b. Program Learning outcomes I P A*](#)
 - [*PHYS 06. Courses Handbook*](#)

- ***Consistency Matrix Appendices***

- [*MPU01. Consistency between University & College Missions*](#)
 - [*MPU02. Consistency between College & Physics Program Missions*](#)
 - [*MPU03. Consistency between Physics Program Missions and Objectives*](#)
 - [*MPU04. Consistency between Student learning Outcomes and Program Objectives*](#)
 - [*MPU05. Consistency between Physics Program Outcomes and NCAAA Outcomes*](#)

3 Degree Program: Structures, Methods and Implementation

3.1 Structure and modularity

Students must fill out an application for the degree certificate. The forms are available in the Universal portal, *for further information on registration (Appendix [MU 09](#))*.

The certificate of student is given an overall grade, which is the weighted average of the entire student's physics courses that were graded with a number. An overall grade is given only when a minimum of 120 credits in the degree have been completed at Majmaah University and assessed on a scale of 1-5. The overall grades are determined as follows:

Table 3.1: Grade distribution

Grade Points	Grade Meaning	Latter Grade	Percentage Grade	Grade Points	Grade Meaning	Latter Grade	Percentage Grade
95-100	Excellent+	A +	5.00	2.00	Pass	D	60-64
90-94	Excellent	A	4.75	1.00	Failure	E	< 60
85-89	Very good+	B +	4.50	1.00	Debarred	H	0.00
80-84	Very good	B	4.00	0.00	Withdrawal	W	0.00
75-79	Good+	C +	3.50	0.00	Incomplete	I	0.00
70-74	Good	C	3.00	0.00	Transferred	TR	0.00
65-69	Pass+	D +	2.50				

The overall grade is the average of all the physics program courses completed by the student in the subject in question, weighted according to the workload of each course.

The degree certificates include a Diploma Supplement ([Appendix PHYS 04](#)). A transcript of possible complementary studies completed by the student is annexed to the degree certificate. In addition, the graduate may request a separate transcript of other studies completed at Majmaah University but not included in the degree. Students must apply for graduation. The forms are available in the Majmaah university portal.

The Degree Program in Physics standard duration is four years (8 semesters, full times). The Bachelor's studies start with general studies which include for instance Physics, Mathematics, language and communication studies, and computer skills.

All students in the Program in Physics have the same major subject; Physics. The Bachelor's Project and a seminar (3 CH= 5 ECTS) are included in the Major Subject ([Appendix ZCS 05](#)).

3.1.1 Elective studies and practical training in Physics Program

The student must take a suitable amount of elective studies, see table (2.2), to reach the total of (137 KSA CH= 240 ECTS) credits required for the Bachelor's Program. Studies in other domestic or foreign higher education institutions can be included in the Program by application; the studies are approved by the Head of Degree Program ([Appendix MU 09](#)).

Practical training is included in the Physics Program as a prerequisite course to the project. The total value of obligatory practical training is 2 ECTS credits. The student shall enrollment practical training in level seven under supervisor of the project. The training and project thesis will be approved by the reviewer of the project examination and supervisor (*Appendix [PHYS 01](#)*).

3.1.2 Workload and credit points

The basic unit of the studies is a credit. A course is scored by assessment which required to pass it. To complete the studies of one academic year requires on average 1600 hours, which corresponds to 36 credit Hour in KSA system which equal 60 ECTS credits points (*Appendix [PHYS 02](#)*).

One credit point equals to approximately 26 hours' workload, including face-to-face teaching hours, individual studying, as well as preparation for and taking part in the examinations. Obligatory practical training of 2 credits is required for the Bachelor's degrees. For training, one credit equals to three week's working as an employee.

The Degree Program is composed so that by following the study guide (*Appendix [PHYS 06](#)*), the degrees can be completed within the standard period of study (i.e., it is possible to take 60 credits per year on average), and the maximum of 75 credits is not exceeded in any year (*Appendix [PHYS 02](#)*).

If a student conducts studies in another university or educational institute in KSA or abroad, he can request the head of the degree program to credit the studies taken elsewhere. A student can credit and replace study courses also by knowledge gained otherwise.

A student can credit and replace study courses also by knowledge gained otherwise. Still, at least 80% credits of Bachelor's degree (including the project thesis) have to be passed at Majmaah University.

3.1.3 Workload and credit points in Bachelor's Degree

The workload for the Bachelor's degree is presented in Table 3.2. The detailed workload analysis can be found in *Appendix [PHYS 08](#)*. The academic year consists of two semesters. The studied are four Academic years. The Free studies are included to the workload analysis in Table 3.2, which the student can choose any courses taught at Majmaah University to the elective studies according to his interest.

Table 3.2: Workload per semester of study and periods; Physics Program

Level (Semester)	Credit Hours	Contact hours (class hours)/week		Average of independent Study hours/week	Total workload/ week	Total workload/semes ter
		Lectures	Tutorials or Labs			
1	14	8	12	16	35	525
2	15	9	12	18	37	555
3	18	17	2	24	45	675
4	18	15	6	27	50	750
5	18	18	0	34	52	780

6	18	14	8	33	56	840
7	18	14	8	33	58	870
8	18	12	12	35	60	900
Grand total	137				393	5895

The Bachelor's Project and seminar (5 ECTS cr) is scheduled to the periods seventh and eighth levels in B.Sc. or after 90 Credit. Language studies are scheduled in the first year and the elective courses program presented in the last semester (8 levels). The program compulsory courses are in the third to seventh levels. University Compulsory courses are in the levels from third to seventh levels.

Table 3.3: Workload per year of study and periods; Physics Program

		Physics Program			
		1 st semester	2 nd	KSA (CH)	ECTs (cp)
General Studies (GS) and Courses	First Year	14	15	29	50
	Second year	18	18	36	63
	Third year	18	18	36	63
	Fourth year	17	18	36	63
	Summary	67	69	137	238
	Obligatory			120	210
	Elective studies			16	28
	Practical Training			1	2
				137	240

Studies in other domestic or foreign higher education institutions can be included in the degree by application approved by the Head of Degree Program. More detailed description of the credit point system and inclusion of studies in other institutions have been presented in the University Regulations on Education and the Completion of Studies (*Appendix MU 03*).

3.2 Educational methods

The teaching methods applied in the B.Sc. Degree Program in Physics include lectures, classroom and laboratory exercises, assignments, project work, and seminars (*Appendix PHYS 07*). The courses also involve group work which trains the social competences of the students. Computer-based 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 (*Appendix PHYS 08*). As an average the student has 2 hours of independent study per contact teaching hour. If the final Project, which is mostly self-study, is not included, the coefficient is 2.5. The calculation of the self-study and contact hours for each course is presented in *Appendix PHYS 08*.

In the Degree Program, practice-oriented, problem-based learning are applied in some courses. To

support the educational activities, the College of Science publishes the Teacher's Quality Manual (Appendix [ZCS 02](#) and [ZCS 08](#)) that provides the teaching staff with guidance, for instance, on the following issues:

- *Teaching planning*
- *Defining learning outcomes of a study course*
- *Determining the content of a study course*
- *Deciding the appropriate methods to evaluate the achievement of the learning outcomes*
- *Selecting suitable methods of teaching*

The Teacher's Quality Manual is designed to improve the quality of higher education and is available to all teaching staff at the College.

The student has a possibility to impact the content of his studies by choosing the subject of an assignment and the project according to his interests. In general the student acquires the topic of his project from companies or research projects of the degree program. The topic of the project the student can acquire himself from companies or write from the topic given by the professor of choice. In addition to the subject selection, the student may direct the contents towards his goals in work.

3.3 Support and advice

Zulfi College of Science offers academic guidance actions that together cover the entire span of studies and efficiently support studies and learning (Appendix [ZCS 10](#)). With this guidance, students are able to complete their studies by following an appropriate study plan that they have prepared themselves and to graduate within the desired time. The roles and duties of study guidance personnel and units are listed in Table 3.4 below.

Table 3.4: Academic Guidance Methods

Peer tutor	Introduces new students to the university, studies and the student community, and helps them with practical arrangements at the start of studies. A peer tutor introduces new students to the university facilities, study guidance staff and other students. A peer tutor makes sure that students know the most important practices related to studies: registration for courses, attending lectures, taking examinations, preparing a course schedule, social aspects.
Tutoring coordinator	Coordinates and develops the university's peer tutoring together with faculties, Student Services and the student union.
Student adviser	Student advisers are Majmaah university students who work part-time while they study. They provide information and guidance in studies, see to the choice of tutors and arrange their training together with the study coordinator and take part in arranging briefings for students.

Study counseling psychologist	Counsels students in problems related to studies and learning and provides expertise in issues involving learning and guidance, supporting other study guidance personnel.
Study coordinator	Coordinates study guidance for students. The duties include study and degree guidance for students, from applicants to postgraduate and partly even mature students. The study coordinator helps students in preparing their individual study plan (including the recognition of prior learning and studies outside Majmaah University, e.g. through the flexible right to study) and provides guidance in administrative issues related to graduation.
Head of degree Program	Is in charge of evaluating and developing study guidance. Grants acceptance of courses not offered by the university.
Head of study affairs	Is responsible for organizing study guidance in the faculty. Is responsible for administration of studies and partly also for study guidance related to administrative affairs.
Teacher/tutor	Helps students prepare their individual study plan and follow its progress. Teacher/tutors provide guidance in the selection of compulsory and elective subjects from the viewpoint of career guidance. They are study guidance personnel appointed for a department or degree program. Students may turn to them with any issues involving studies.
Teachers	Are responsible for study guidance related to the completion of the courses/courses they are responsible for.
Introductory course/module	Introductory courses are arranged in all degree programs to help students get started with their academic studies. Introductory courses usually also guide in preparing an individual study plan.
Professors	Provide guidance in the selection of a research topic, and in preparing final theses for undergraduate and postgraduate studies.
Career Services	Guides students in career planning and searching for employment.
Library	Provides guidance in information retrieval and instruction in information literacy.
Origin helpdesk	Supports services for the use of information and communication technology in studies.

At the beginning of their studies, students prepare an individual study plan on the Introductory Course.

The study plan is made for the entire duration of the studies in the Bachelor's program completed. An independent study plan is a tool that helps the students plans their studies. Its purpose is to help students to see their studies as a whole from the beginning, and to support students in choosing courses. The aim is also to avoid delaying graduation unnecessarily. It also awakens students to

realize their own responsibility for their studies, motivates and encourage them to make a commitment to their studies. Based on the individual study plan drawn by the student, in the degree physics program, the student and the teacher adviser will have a discussion on the plan ([Appendix PHYS 13](#)).

Teacher advisers are experts of the various fields in physics who provide the students with content related tutoring regarding the individual study plan. Teachers are responsible for the courses they teach, as well as supervision concerning contents of their own subjects. Persons in charge of the courses are required to have a doctorate. Teachers are available at the university mainly during office hours, but students may have guidance and individual supervision also out of these hours by fixing the time with the teacher.

APPENDICES:

- ***Majmaah University:***

- [MU 03. Implementation Rules of Undergraduate Study and Examinations.](#)
 - [MU 09. Enrollment & Regulation Deanship.](#)

- ***Zulfi, College of Science:***

- [ZCS 02. Teacher's Quality Manual](#)

- [ZCS 05. Project Handbook](#)

- [ZCS 08. Staff Handbook](#)

- [ZCS 10. Academic Advising](#)

- ***Physics Program:***

- [PHYS 01. Program Specification](#)

- [PHYS 02. Program Handbook](#)

- [PHYS 04. Study Plan](#)

- [PHYS 06. Courses Handbook](#)

- [PHYS 07. Teaching methods and Independent Study](#)

- [PHYS 08. Student Workload](#)

- [PHYS 13. Diploma Supplement \(Example\)](#)

4 Examinations: System, Concept and Organization

4.1 What is assessment?

Assessment is systematic process of documenting and analyzing the effectiveness of the teaching and learning process, administrative and support services, and research and community engagement activities, to ensure that the expectations and standards are met in fulfilling the mission of College of Science ([Appendix ZCS 12](#)).

4.2 Process and Steps in Assessment:

The assessment process has the following steps ([Appendix PHYS 10](#)):

- a. Formulating a statement of outcomes and objectives as derived from Program and College of Science mission
- b. Establishing the tools and methods of measurement of extent of achievement
- c. Determining the criteria for successful achievement as KPI's
- d. Observe, document and analyze the results against the predefined KPI's
- e. If the criteria are met/objectives achieved, the results are documented
- f. If the criteria are not met/objectives not achieved, results are referred to the appropriate entity (committee, department or administrator) for action plan development and implementation
- g. The action plan for improvement and action taken is provided to the assessment committee for future assessment
- h. All action taken and results are documented to stakeholders through an annual report ([Appendix PHYS 12](#))
- i. All the data regarding a particular area (program, administration, research, community engagement etc) are gathered and reported to the appropriate committee (Curriculum Development Committee, Committee or Strategic Planning) ([Appendix ZCS 01](#)).
- j. In the case of successful achievement of objectives and goals in a particular area, forward planning with revised specified objectives/goals/ to achieve a revised mission in the next strategic plan is undertaken.
- k. Revising specific goal/objective based on the information learned during the assessment cycle, consistent with relevant change in the strategic plan and other areas of need, as determined by the assessment results or stakeholders input.

4.3 Assessment Plan of College of Science

Excellence in Physics education and research, with community engagement and appropriate quality and administrative measures are College of Science goals derived from College of Science mission, which is in line with that of Majmaah University. To fulfill this mission, College of Science offers a quality B.SC in physics program, while all other mission related areas support the program and contribute towards achievement of institutional goals and mission of Majmaah University.

The Assessment Committee of College of Science in collaboration with the Study plan Committee has developed its assessment plan for self-assessment of and accountability for all the actions and procedures leading toward achievement of the College of Science mission through achievement of the B.Sc in Physics Program outcomes and College of Science

strategic plan goals and objectives, pertaining to mission related areas, to determine the extent of achievement and to provide input to the concerned sections for progress to comply with the Quality Standards of National (NCAAA).

4.4 Components of College of Science Assessment Plan

4.4. a Program Assessment Plan

i. Assessment of extent of achievement of terminal program objectives

Current forms of assessment are based on the analysis of the student result for learning outcomes call attention to the need for additional criteria to establish the validity of score use and interpretation, particularly the quality and nature of the performance that emerges in an assessment situation.

Claims that performance assessments measure higher order thinking skills and deep understanding, for example, require detailed cognitive analysis. Detailed cognitive analysis should illustrate the kind of performance actually elicited from students in alternative assessment situations and document the relationship between those performances and the problem-solving activities that contribute to differential performance. That is, the level and sources of task complexity should match those of the construct being measured and be attuned to the level of developing expertise of the students assessed.

ii. Assessment of Program Effectiveness

In addition to the assessment of achievement of terminal program outcomes, following strategies are included to strengthen the data to determine the effectiveness of the program:

- a. Job placement data
- b. Data regarding the number of College of Science graduates securing scholarship for graduate studies
- c. Quantitative and qualitative data program and its outcome (graduates) from :
 1. External preceptors,
 2. Graduating students,
 3. Alumni ([Appendix MU 09](#))
 4. Stakeholders and
 5. Employers
- d. Benchmarking the students/graduates' achievements with those of peer national programs

4.4.b Plan for Assessment of achievement of College of Science

This component of the plan aims to assess the achievement of all the College of Science strategic plan objectives in the mission related areas, as well as in relation to quality standards

- i. Student support, and development
- ii. College of Science Administration
- iii. Resources and facilities for successful program administration
- iv. Staff recruitment, development and retention
- v. Community engagement

vi. Research

4.4.c Types of Assessment

The faculty and staff at Zulfi College of Science are committed to the ongoing process of assessment of student learning, characterized by the following steps:

- Define learning outcomes
- Collect evidence
- Evaluate evidence
- Improve programs

There are two types of assessment:

i. Direct Assessment:

Assessments that involve examination of student work or performance, there are various types of evaluation methods (see table 4.1) are widely used. Courses are not often evaluated by the final examination only. Assignment, laboratory work, homework, seminar etc. may contribute to the final grade of a course (*Appendix [PHYS 09](#)*). The final examination also can be substituted for written intermediary tests in some courses. Examinations are typically written including essays, problem-solving or case-based questions and calculation problems. The evaluation method used in the course is described in program Handbook (*Appendix [PHYS 02](#)*) and program learning outcomes matrix direct assessment (*Appendix [PHYS 15a](#)*).

Table (4.1): Types of evaluation methods

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	First exam	5-6	
2	Second Exam	10-11	
3	Final Exam	16	
4	Laboratory	Lab. Reports	weekly
5		In-lab. Evaluation	weekly
6		Final practical exam	15
7	Quizzes	--	
8	Homework	--	
9	Exercises	--	
	Seminar		
	Total		100 %

Examinations are arranged according to the curriculum. Examinations outside the schedule can also be arranged.

Courses are usually evaluated on the scale as:

Table (4.2): Courses distribution Grads

Grade Points	Grade Meaning	Latter Grade	Percentage Grade	Grade Points	Grade Meaning	Latter Grade	Percentage Grade
95-100	Excellent+	A +	5.00	2.00	Pass	D	60-64
90-94	Excellent	A	4.75	1.00	Failure	E	< 60
85-89	Very good+	B +	4.50	1.00	Debarred	H	0.00
80-84	Very good	B	4.00	0.00	Withdrawal	W	0.00
75-79	Good+	C +	3.50	0.00	Incomplete	I	0.00
70-74	Good	C	3.00	0.00	Transferred	TR	0.00
65-69	Pass+	D +	2.50				

The maximum score for each course is 100 points, and 60 points is required to pass the course (*Appendix [ZCS 04](#)*).

Grades obtained in courses are listed in the university website data system, and transferred to the student website, that students use to enroll to courses and examinations. Students can view their grades and the weighted average of their studies at any time. Grades included in the degree, and their weighted average (GPA), are listed in the report that complements the diploma.

A final project thesis is required to complete the Bachelor's degree program. The project thesis is independent work of student, and its topic and content are discussed with supervisor before starting the work. The peer committees are required to assess the project thesis. The examiners and supervisor of project thesis must have the degree of M.Sc. at least (*Appendix [MU 01](#)*). The project thesis is a course the graded on the scale of 0-100. The Bachelor Seminar of Physics includes a written project thesis, seminar presentation at a colloquium consisting of other Bachelor-level students and teaching. Supervisor and examiners are collaborated sharing in the evaluated. The project thesis degrees are divided equally between the supervisor and peer committee. The directive assessment matrix is in *Appendix [ZCS 05](#)*. The assessment matrix is presented for the students in the first lecture as in table (4.1).

ii. Indirect Assessment: Assessments:

This assessment approach is intended to find out about the quality of the learning process by getting feedback from the student or other persons who may provide relevant information. It may use surveys of employers, exit interviews of graduates, focus groups, or any number of Classroom Assessment Techniques.

Both of these assessment approaches provide useful information in improving student learning. Indirect assessment can gives us immediate feedback which can be employed in a course to bring direct improvement to student learning. Unfortunately indirect assessment does not provide reliable evidence that learning objectives have been achieved. The use of surveys and focus groups may lead to improvements in a program but do not directly provide evidence of student learning.

Indirect assessments gave indications of learning success, but no evidence. We may improve learning by following the information provided by indirect assessment but it does not prove that learning has achieved our expected standards. We can learn from indirect assessment but we must also use direct assessment (actual student work product) to provide real evidence that learning has been achieved (*Appendix [PHYS 10](#)*).

4.5 Program Assessment

4.5.1 Concept:

Program assessment is an on-going process designed to monitor and improve student learning. Faculty members, led by the Curriculum Development and Assessment Committee:

- a. Develop explicit statements of what students should learn.
- b. Verify that the program is designed to foster this learning.
- c. Collect data that indicate student attainment.
- d. Use these data to improve student learning

4.5.2 Objectives of Program Assessment

a. To Improve

- i. Study plan, courses, and course objectives
- ii. Instructional strategies, methodology and practice
- iii. Student services

b. Accountability (also measuring effectiveness of program)

- i. Benchmark with peer program outcomes/student achievements
- ii. Feedback from stakeholders regarding academic product and its utility
- iii. Graduates pursuing further studies, compete for national and international scholarships
- iv. Justification for resources being used by College of Science.

c. To secure Accreditation : Program Accreditation by NCAAA: which will certify that the resources and facilities provided, processes of teaching and support services, and the quality and extent of students learning in terms of knowledge, skills and abilities needed for Physics practice meet required standards for the qualifications that is offered.

4.6. Program Development process at College of Science:

1. Development and revisiting the program mission and the curriculum, according to Vision and Mission of the University and the College of Science (*Appendix, [MPU 01 –MPU 03](#)*).
2. Mapping the course objectives with terminal program outcomes.
Accomplished by course instructors, in consultation with departmental coordinators and the curriculum committee.
 - a) Mapping of course objectives (*Appendix [PHYS 10](#)*) with:
 - 1) Teaching and Assessment Methodologies
 - 2) Terminal Objectives. Blueprinting of courses
 - b) Mapping of Course ILO's with teaching and assessment methodologies at the start of each semester (*Appendix [PHYS 01](#) & [PHYS 07](#)*)

3. Benchmarking of study plan with similar national and international programs:
National (College of Science, King Saud University) and *International* (United Arab of Emirates University and University of California, Santa Barbra, USA) (*Appendix [PHYS 17](#)*).

APPENDICES:

- ***Majmaah University:***

- [MU 01. The Statute of the council oh Higher Education and Universities \(Univ. Act\).](#)*
 - [MU 09. Enrollment & Registration Deanship.](#)*

- ***Zulfi, College of Science:***

- [ZCS 01. Zulfi, College of Sciences Strategy Plan 2013](#)*
 - [ZCS 04. Calculation of the Final Grade \(GPA method\)](#)*
 - [ZCS 05. Project Handbook](#)*
 - [ZCS 12. Assessment and Measurement Guide](#)*

- ***Physics Program:***

- [PHYS 01. Program Specification](#)*
 - [PHYS 02. Program Handbook](#)*
 - [PHYS 07. Teaching methods and Independent Study](#)*
 - [PHYS 09. Course Assessment methods Evaluation](#)*
 - [PHYS 10. Course Feedback \(example\)](#)*
 - [PHYS 12. Annual of Computer Science/Information program report](#)*
 - [PHYS 15.a Direct PLO Assessment](#)*
 - [PHYS 17. Benchmark.](#)*

5 Resources

5.1 Staff involved

Within College of Science in Zulfi, there are about 51 Staff faculty members' working full time (14 Physics, 21 Mathematics and 16 Computer Science). The Department of Physics employs about 22 persons. The composition of teaching and research personnel in Physics department based on a five-step category: Demonstrator Student, Lecturer staff, Assistant Professor, Associate Professor and Professor in Table 5.1. Inside the employs number found one technician and secretary. The employment contracts of the personnel one year contracts positions for all. The number of total academic staff accounts is 20 including Lecturer and Demonstrator. The Curriculum Vitae of each staff member participating in teaching is enclosed in the staff CV (*Appendix [PHYS 16](#)*).

Table 5.1. Staff Contributing to the Degree Program (2014)

Position type	Physics	Mathematics	Computer Science
Professors ¹	2	3	0
Associate Professors ¹	3	2	2
Assistant Professors ¹	9	11	9
Lecturer ¹	3	5	5
Demonstrator Students	3	9	12
Total academic Staff	20	30	28
Full time	14	21	16
Scholarship	3	9	9

¹Personnel with teaching responsibility

5.2 Staff development

Professional development is the strategy of the college and school districts use to ensure that educators continue to strengthen their practice throughout their career. The most effective professional development engages teams of teachers to focus on the needs of their students. They learn and problem solve together in order to ensure all students achieve success. College systems use a variety of schedules to provide this collaborative learning and work time for teachers. When time set aside for professional development is used effectively and parents receive reports about student results, they realize the benefits to teachers and their students far outweigh the scheduling inconvenience. When communities see their schools making steady upward progress, they applaud the role of effective professional development.

College of Science aims to create a good working environment for its staff, and to support their professional development and well-being at work.

The Majmaah University has a human resources committee through which the university personnel have representation in decision-making concerning the development of the working environment and conditions. The Committee also annually revises the measures for professional development and maintaining professional expertise that determine the focus areas of personnel training at the university. The chair of the Committee is the Vice Rector in charge of education. The names of other members and the Committee memoranda are available on the University web site <http://www.mu.edu.sa/Science>.

University staff members conduct annual performance and development discussions with their immediate Chairman. The parties of the discussion examine results obtained, set goals for the near future also concerning the professional development and personnel training needed. Instructions for performance and development discussions are available on the University web site.

5.3 Institutional environment, financial and physical resources

5.3.1 Institutional environment description of the institution

Zulfi College of Science applies the Regulations on Education and the Completion of Studies (*Appendix [MU 03](#)*) approved by the Rector. The Regulations define the basic ways of action concerning the teaching and studying at the college and the degree programs provided by the University. The Regulations are published on the University's web pages www.mu.edu.sa

The university council decides the strategic long-term goals of the university teaching and education, and the degree programs provided by the University. The council also decides the number of new entrants accepted to the University's degree programs.

The University consists of 13 Colleges which the evaluation and administrative are controlled by the Dean. In addition, each degree program has a chairman. The Dean organizes a meeting between the heads of the degree programs once in every month to discuss the leading, evaluating and developing principles of the degree programs. The decisions of the meetings are published on the University web site, which are available to the committee members. The Vice Rector also leads the University's supervisory and development committee for teaching appointed by the Rector. The objective of the group is to promote the internal cooperation within the University in developing the teaching customs.

The student representation in the University's administrative bodies is determined by the Universities Act and the Administrative regulations of the University. In accordance with the statutory representation in the administrative bodies, the students also have a representation in the University's supervisory and development group for teaching.

5.3.2 Committees responsible for teaching in the degree program

The Department of Physics is a part of the College of Science in Zulfi Governorate in Majmaah University. The head of the college is the Dean, and the chairman of the college is the faculty council. The Dean acts as the chair of the faculty council. The Dean manages the college and is responsible for the results of its instruction, research and societal influence. The faculty council makes decisions regarding the curricula. A study guide presents the aims and organization of the education, and the course descriptions and learning outcomes of courses in the degree (*Appendix [ZCS 03](#) and Appendix [PHYS 06](#)*).

The College of Science has a Quality Unit for teaching appointed by the Dean of the College. The unit is responsible for developing the quality of teaching and the contents of the degree programs within the College. The unit has representation from each degree program provided by the College. The unit also has three student representatives that are

appointed on the basis of the recommendations of the Students Guidance Unit (*Appendix ZCS 10*).

The College Council is responsible for supervising the quality of teaching. The Council also decides the study plans and the degree requirements. In addition, the Council makes the proposal to the Rector concerning the entry requirements and the number of new entrants accepted to the degree programs.

The College is responsible for the equipment needed in teaching and research. The Dean of the College is responsible for the resources needed in teaching. The Dean also appoints the heads of the College's degree programs.

The heads of the Departments are responsible for managing, evaluating and developing the degree programs. The heads of the degree programs accept the topics of the Bachelor of Science students. Each degree program of the College also has an advisory group to support the work of the head of the program.

Teachers in charge of the study courses are responsible for executing, evaluating and developing their own teaching. The College has published Teacher's Quality Manual to support the teaching activity (*Appendix ZCS 02*).

5.3.3 Physical Resources

The College of Science has 25 classrooms, and 200 Computer in distributed 9 Labs and work premises for group work. The library provides services for students and staff, and for outside customers. In the College premises, there is a restaurant and a cafe available for students, staff and other people. Four rooms have been reserved for students' activity. There is also a student health centre.

5.3.4 Computer facilities

University offers laptop computer for all staff. Printers and scanners are available. The computers for personnel are equipped with special programs used in research and teaching purposes. Special program for smart boards and research are available.

Students can use the computers that are in common use in the library area, or in the computer laboratories. The University's Information Services and Technology (IT) Unit is responsible for the computers, software and data base systems.

Centralized services, such as the learning environments can be accessed also outside of the campus. The university offers LAN services to enable the use of students' own computers at the campus. Students enroll on the courses and see their credit points through <http://edugate.mu.edu.sa/mu/init> Web data system. They get the course information, learning material and assignments of the courses through Portal Websites staff members.

There is also a computer lab, high quality service, to have e-learning training, where it is available in times of workshops and training. The time schedule is available and setting by the Deanship of E-Learning in Majmaah University.

5.3.5 Library

The Libraries are full of interesting materials that can supplement your course and your Moodle sites such as images, articles, eBooks, videos, music and more.

View examples within Moodle: <http://sdl.edu.sa/SDLPortal/EN/Publishers.aspx>

Library information:

Library lies in Zulfi Campus in the second floor. There are 3333 Arabic and 2567 English Books. The numbers of day entries are 170, approximately. Where the borrow books from the library are 174, approximately. Inside the library there is an internet lab. , which is offered for the students and staff. The numbers of students connected to the SDL library are approximately 200 student/day.

Library Departments:

- a. Library Administration
- b. Beneficiary Services
- c. Electronic Index

Library's Possessions:

Library possess a range of various information sources estimated with a number of 280 titles and 845 copies and volumes in all physical sciences.

Library Systems:

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

Library Services:

1. Internal reading service
2. Automatic Search in the library indexes.
3. Reference Services
4. Photography
5. Continuous Updating
6. Internet Service

Why use links through the Libraries in your courses?

- Make use of the large, high-quality collections of the University Libraries
- Don't make your students pay for the same article/source twice by requiring course packets
- Ensures all students (both on-campus and off-campus) have access to the desired source
- Conforms to the University licensing agreement for use of database subscriptions
- No need to worry about potential copyright issues

Note: Just grabbing the URL in your browser bar won't work (or it will only work for a short time or not for off-campus access) due to the complex way the links are generated.

How to link to articles from Moodle:

Learn how to get to the "persistent" link to add to your Moodle:

<http://sdl.edu.sa/SDLPortal/EN/Publishers.aspx>

OR let us do it for you: University Libraries Course Reserves Service Send us your syllabi or reading list and we will:

1. Get the materials if needed and
2. Post electronically or put on reserve through the Libraries. You will get an access code to share with students. <http://sdl.edu.sa/SDLPortal/EN/Publishers.aspx>

There are no restrictions to the number of download books and papers. 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. Information literacy education for the entire University is also arranged and given by the Library personnel.

The Library is open to College staff, students, and general public during terms on workdays: Sunday-Thursday 8:00–18:00. In summer and during the holiday season the Library closes at 14:30 on each workday.

Inside the library was constructed an advanced computer laboratory. It is available free to the students in the same library open time. This lab connected to the internet and supplier of some programs.

5.3.6 Laboratories

The physics program should have students engaging in classroom and laboratory activities that involve the processes of science, employing an inquiry approach. These activities involve groups of students working together to solve a problem, measure an important value or find a relationship among variables.

In Physics Department, there are *seven* laboratories were established. Every year laboratories were modernization according to the fund available. The student groups in the laboratory are 25 or less according to the laboratory size. Those seven laboratories are served the student during the B.Sc. There are two lab. in general physics and thermodynamics. Nature phenomena of light are studying in optics laboratory. Electromagnetism courses are studies in other laboratory. Modern Physics, nuclear and solid state physics are studying in three other separated laboratories, see *Appendix [PHYS 14](#)*.

The Resources of physics Laboratories in Zulfi College of Science was discussed as:

Since effective high school physics learning requires active participation in laboratory activities to support classroom instruction, laboratory facilities are essential. In some schools the laboratory is part of the regular classroom, and in some schools it is a separate room. In either case, the size of the physics laboratory must be large enough so that all students can participate in real, hands-on laboratory activities. There should be adequate ceiling height and means for hanging laboratory equipment.

Most physics experiments Sinks, water, gas, and electricity should be provided safely and convenient to the tables (e.g., around the perimeter of the room). Adequate lighting with light-dimming capabilities should be available. The ability to darken the laboratory thoroughly is required for most optics laboratory activities.

Safety equipment should include items such as a fire blanket, fire extinguisher, safety goggles, and any other safety equipment required by local codes. This might be very important if physical science is to be taught in the same laboratory. Safety procedure checklists should be developed for the physics laboratory. Safety checks should include electrical equipment, suspension systems, lasers, radioactive sources, radiation-monitoring equipment, etc. There should be a maximum of one year between safety checks. This is often done at the beginning or end of the school year.

Adequate storage space must be available for laboratory equipment and materials. The storage space with cabinets and shelves of various sizes is essential to accommodate the variety of laboratory equipment used in a physics program. Basic tools (e.g., drill, hammer, pliers, screw drivers, soldering iron, etc.) should be available and maintained. Essential supplies should be kept in stock. Adequate storage prevents unnecessary breakage or loss of laboratory equipment and allows immediate accessibility. If special student projects are encouraged, space to store and work on projects should be provided. Adequate workspace must be available for both teacher and students.

Appropriate laboratory equipment is essential for teaching and learning physics. The opportunity for active student engagement with laboratory equipment in a laboratory or experimental setting should reflect the curriculum. Examples of active student engagement include using computers to gather and analyze data, using standard measuring devices (e.g., electronic balance, force meter, graduated cylinder, protractor, voltmeter, etc.), using ripple tanks to illustrate wave phenomena, using a photo-gate to time the motion of a pendulum, etc. The appropriate description of the physics laboratories are presented in table (5.2). Inside each Lab. is a Storage room and Technician office except of Modern Physics and Electromagnetic Labs. In Nuclear Physics Lab. there is a Container of radioactive sources.

Table (5.2): The appropriate description of the physics Lab.

Bulletin board	1	1	1	1	1	1	1
Active Board	1	1	1	1	1	1	1
Band-Aid	1	1	1	1	1	1	1
Alarm	2	2	2	2	2	2	1
Fire pump	1	1	1	1	1	1	1
Light number	20	20	20	22	23	29	20
Door number	1	1	1	1	1	1	1
Windows number	6	4	3	4	4	6	3
Height (m)	3.10	3.10	3.10	3.10	3.10	3.10	3.10
Width (m)	6.60	6.75	6.25	6.3	7.85	6.80	7.10
Length (m)	13.80	9.70	9.5	9.4	17.5	10.25	9.20
Lab. Name	General Physics and Thermal Lab.	Electromagnetism Lab.	Optics Lab.	Electronic Lab.	Modern Physics Lab.	Nuclear Physics Lab.	Solid State Lab.

Physics Software:

- CPU (Constructing Physics Understanding)
- LOGAL Software
- Physics Academic Software
- Physics Info Mall

APPENDICES:

- *Majmaah University:*

[MU 03. Implementation Rules of Undergraduate Study and Examinations.](#)

- **Zulfi, College of Science:**

[ZCS 02. Teacher's Quality Manual](#)

[ZCS 03. Quality Manual for Studying and Learning](#)

[ZCS 10. Academic Advising](#)

- **Physics Program:**

[PHYS 06. Courses Handbook](#)

[PHYS 14. Laboratories Guide](#)

[PHYS 16. Staff C.V.](#)

6 Quality Management and Further Development of Physics Program

The key aim in the quality management and development is to incorporate quality management (*Appendix [PHYS 11](#)*) into the normal activity of the university, with the underlying idea of continuous improvement. The quality targets have been derived from the university strategy. The university's quality management system covers the entire range of education provided by the university (undergraduate education), research, societal and regional interaction, and support services.

Quality Management Unit (QMU) (*Appendix [PHYS 11](#)*) established and developed by the Department of Physics in the continuously University's mission improvement of its programs.

To manage and develop quality assurance, the unit will accomplish the following:

1. Evaluation of the documents and evidence of quality assurance and development.
2. A proposal of unfinished requirements plan.
3. Submit a report to assess of the standard requirements

6.1 Quality assurance and further development

The university's quality management system is described in the university quality handbook and the regulations of organizational units (e.g. support services). These quality regulations include also process descriptions and procedures for key processes. The university's quality management documents and other related material are available on the Majmaah University intranet (*Appendix [ZCS 11](#)*).

The main quality handbook depicts the university's quality policies and goals, key resources, the university's management practices, the university's key processes and their quality management, and practices related to the assessment, measurement and development of activities. The main quality handbook lays a foundation for describing the entire quality management system of the university and gives both internal and external stakeholders a comprehensive picture of the quality management of the university's different activities.

The college of science has set quality targets, which have been derived from the college strategy (*Appendix [ZCS 01](#)*).

The following quality targets apply to academic education.

- Students at the collage will obtain high-level academic know-how, including specialist skills of his own field and transferable skills needed to utilize the specialist skills.
- The university's students and employers of Majmaah University graduates are satisfied with the contents and implementation of the studies. The teaching staff is satisfied with the conditions provided by the University for teaching.
- The possibilities for lifelong learning are diverse and flexible; and education is produced according to the needs of the target groups.

The quality management system was described in Teacher's Quality handbook in order to guide teachers to good teaching. As well as Quality Guide for Studying and Learning in the

college to strengthen the students' role in the quality of education (*Appendix [ZCS 02](#) & [ZCS 03](#)*).

Dean is in charge of education at the college. He manages the educational affairs and development of education of the university in cooperation with the heads of degree program and steering and development committee for teaching.

The Dean and the heads of degree programs have regular meetings, where they evaluate and discuss about procedures concerning education and needs for development. The steering and development committee for teaching, in an advisory capacity, aids the Dean in decision making. The committee, headed by the Dean, coordinates and promotes the development of College education, and prepares the application procedure for the quality bonus for teaching and prepares the allocation decision for rector.

6.2 Comment and General Description of Quality Assurance

- A high quality institution should regard itself as a learning organization, one that systematically studies the quality of its own activities on a continuing basis and uses what it learns from that study to improve its operations.
- The central focus in these assessments should be the quality and extent of students' learning considered as outcomes; what students understand and can do as a result of their studies whether that learning is appropriate to their field, and how well has it been learned. Other important outcomes are research (for institutions with that responsibility) and broader contributions to the community.
- A wide range of other activities that provide supporting infrastructure must also be evaluated and progressively improved, and the relative emphasis on these will vary over time in response to the institution's mission, the circumstances in which it finds itself, and its strategic priorities for development.
- A senior member of College should be given responsibility for leading the quality assurance processes, and a committee drawn from all parts of the organization should be appointed to provide advice and assistance, and oversee what is done. An office should be established within the central administration to coordinate and lead quality assurance activities. Self-assessment and planning for improvement should occur regularly in all parts of the institution, with benchmarks for comparisons of performance selected for the various programs and administrative units. The objectives for each administrative unit should be demanding, but appropriate and achievable.
- Quality improvement should be integrated into the institution's normal planning processes in a continuing cycle of planning, implementation, evaluation and review. The system should involve continuous monitoring of evidence about performance and independent advice on interpretations of that evidence, with adjustments made in activities to ensure that quality of performance meets the benchmarks that have been established. Internal reporting of performance and adjustments in strategies should take place at regular times, normally at least once each year, with more extensive reviews of programs and broader institutional activities at least once every five years.
- While rigorous standards should be applied, the institution should have an atmosphere of encouragement and support in which weaknesses are openly acknowledged and assistance

provided to overcome them.

6.3 The QM Unit Tasks:

6.3.1 The core tasks of the Units are:

1. Determine the nature and sources of information.
2. Inventory of components, measurement instruments and associated subsidiary criteria.
3. Preparation of action plan to achieve the objectives referred to above.
4. Design and collect information forms from different sources.
5. Collect the information from Responsible authorities and analysis.
6. Introduce the evidence of finished requirements.
7. Restriction on the unfinished requirements.
8. Introduce the plan process which enables the Institute to finish the requirements.
9. Preparation of the reports.
10. Follow-up the implementation of the recommendations of unfinished requirements and collect the evidence.

6.3.2 Contact officials and information sources:

1. The senior managements of the University.
2. The Deans of faculties.
3. Heads of departments.
4. Deans of deanships and specialized centers.
5. Managers and staff.
6. College members.
7. Quality faculties units.
8. Students.
9. Community

6.4 Quality assurance at Physics Program

In Physics program, there is an advisory steering committee for the program. It supports the head of the program in producing, assessing and developing the program. The advisory steering committee meets and handles issues related to the degree program's teaching, research, and economy, as well as the development of the program.

Further development of the program

The key areas in terms of developing the quality of education at college of science are the following:

- 1 development for education
- 2 development for research,
- 3 Support services for education and research.

College of science is actively to use several education tools. The Dean decides on development projects which college of science engages in and starts to promote.

The university grants quality bonuses for the development of education for a year at a time. The quality bonus is a reward for development measures taken and an incentive for the further development of education and teaching. The Excellence unit for education makes the preparations for the application procedure and the decision to grant a quality bonus, and the dean appoints the recipients of the bonus (*Appendix [ZCS 06](#)*).

The employment of the teaching staff is based on scientific qualifications and their development. The development of teaching skills and the variety of teaching duties, and responsibility for one's field of science and its development.

The support services for education allow teachers to focus on actual teaching and study guidance. The support services provide administrative services related to instruction, as well as technological support e.g. in setting up web-based instruction. The responsibility for these support services is shared by Student Services and Information Services and Technology, which operate within the context of University Services, and by college support services. Desire2Learn, a web-based learning environment, is in use on nearly all courses of Physics. Information Services and Technology will be responsible for the implementation of the new learning environment and training of the personnel (<http://eltest.mu.edu.sa>).

The recognition of teaching qualifications and the adoption of teaching portfolios in the appointment of teaching personnel support the development of teaching. For teaching positions, the university recruits professionals with not only strong scientific expertise in the field in question, but with teaching skills, as well. In the end, applicants for teaching positions must also submit a teaching portfolio or another report on their teaching qualifications. Instructions for compiling a teaching portfolio are available on the web site. In addition, the appointment of professors requires a trial lecture from the applicant. The College in question supplies the applicant with instructions regarding the trial lecture. Instructions are also available from the university registrar's office (*Appendix [PHYS 16](#)*).

6.5 Instruments, methods and data

During their studies, students fill in several questionnaires with which they can give feedback and tell their opinions concerning the studies and conditions in the university. At the beginning of the studies, freshmen are asked to fill in a questionnaire concerning the progress of studies and tutoring of freshmen. A feedback questionnaire to students and peer tutors helps to evaluate whether the start of studies and initial study guidance has been successful. The feedback survey is carried out annually by the Quality Unit. The feedback is discussed with the peer tutors and personnel in charge of study guidance. The feedback combined with practical experiences will be used to develop study guidance for new students and tutor training (*Appendix [PHYS 10](#)*).

The Physics department students compile feedback from each course twice a year. The feedback is published on the education web pages. The feedback is discussed with professors and course teachers and improvement suggestions are reviewed.

The quality committee also compiles student feedback regularly every other year. This questionnaire mainly concentrates on the well being of the students, and it often points out

some needs for development in teaching. The results of the questionnaire are communicated to the university personnel.

6.5.1 Monitoring of credits

A study plan is an important tool to evaluate the progress of studies of an individual student. All students in physics department prepare a study plan at the beginning of their studies. All individual study plans are evaluated by the study coordinator. Plans which are non-standard are confirmed by the head of the degree program. The degree programs are designed and composed so that the completion of degrees is guaranteed within the standard periods of study 4 years. Examples of student study plans for B.Sc. ([Appendix PHYS 13](#)).

The Average and cumulative GPA are calculated every semester for the student automatically by the system ([Appendix ZCS 04](#)). To know how to calculate the averages, you should follow the following steps: Calculating the Semester Average: The GPA is calculated considering the following points:

1. Knowing the number of hours of the courses.
2. knowing the mark obtained in each course.
3. Knowing the corresponding grade of each mark.
4. Knowing the value of each grade.
5. Knowing the points = number of hours of the course \times value of the grade.
6. Determining the total points obtained in all courses of the semester.
7. Determining the total number of hours registered in the semester.
8. The average is calculated every semester according to the following equation :

The percentage of marks, grade and value obtained by the student in each course, which is used to calculate the points:

Mark	Grade	Letter	Value
95 – 100	Excellent +	A+	5
90 to < 95	Excellent	A	4.75
85 to < 90	Very good+	B+	4.5
80 to < 85	Very good	B	4
75 to < 80	Good +	C+	3.5
70 to < 75	Good	C	3
65 to < 70	Pass+	D+	2.5
60 to < 65	Pass	D	2
< 60	Failure	E	1
Absent	debarred	H	1

Calculating the Average Cumulative:

The GPA semester average is calculated as follows:

Table (6.1) shows the grand total of points (for all semesters that have been studied) .The grand total of credit hours (for all semesters that have been studied) .The cumulative average is calculated according to the following equation:

$$GPA = \frac{\text{Grand Total of Point}}{\text{Grand Total of Credit hours}}$$

Here is an example of how to calculate the grades above:

Table (6.1) : Calculating the grade of the first semester

Course	Credits	Mark	Grade	Grade value	Point
PHYS101	4	67	D+	2.5	4x2.5=10
Chem 101	4	73	C	3	4x3=12
Eng 121	3	77	C+	3.5	3x3.5=10.5
Arab 101	2	81	B	4	2x4=8
Total	13				40.5

$$GPA = \frac{\text{Grand Total of Point}}{\text{Grand Total of Credit hours}} = \frac{40.5}{13} = 3.12$$

Table (6.2): Calculating the grade of the second semester:

Course	Credits	Mark	Grade	Value Grade	Points
Math 101	3	61	D	2	3 × 2 = 6
Stat 101	3	73	C	3	3 × 3 = 9
C.S. 206	3	80	B	4	3 × 4 = 12
Arab 103	3	88	B+	4.5	3 × 4.5 = 13.5
Islam 101	2	92	A	4.75	2 × 4.75 = 9.5
Eng 122	3	97	A+	5	3 × 5 = 15
	17				65

$$GPA = \frac{\text{Grand Total of Point}}{\text{Grand Total of Credit hours}} = \frac{65}{17} = 3.82$$

To calculate the average cumulative:

$$GPA = \frac{\text{Total of Point}}{\text{Total hours of semesters}} = \frac{105.5}{30} = 3.52$$

6.5.2 Courses Development

Student feedback for courses is collected for courses in accordance with a college-wide procedure. Quality unit is responsible for collecting student feedback. The electronic feedback questionnaire applies the same assessment criteria to the courses. The survey include the expediency of the course and a general impression of the course (*Appendix PHYS*

15b & [PHYS 10](#)).

The following questions deal with the fulfillment of these criteria:

1. The applied working methods were appropriate for the purposes of the course and they supported my learning during the course. Answers on a scale of 1-5 (5 = strongly agree, 1 = strongly disagree).
2. Overall evaluation of the course (scale of 1-5).
3. Open feedback on the course.

The results of the students' feedback (the average of the courses for study year) are presented in Table 6.3. An example of the course feedback is included in *Appendix PHYS10*

Table (6.3). Course feedback in physics

	PHYS 201	PHYS 203	PHYS 392	PHYS 393	PHYS 422	PHYS 487	PHYS 202	PHYS 481	PHYS 292	PHYS 454	PHYS 472
Question 1	4.1	3.0	4.9	3.7	4.7	4.3	4.0	4.4	4.9	4.3	4.8
Question 2	4.0	3.0	4.9	4.2	4.7	4.3	3.9	4.4	4.9	4.4	4.8
Question 3	3.4	3.1	4.8	4.2	4.7	4.3	3.6	4.4	4.8	4.6	4.8
Question 4	3.3	2.9	4.6	4.3	4.7	4.7	3.3	4.4	4.6	4.9	5.0
Question 5	4.0	3.7	4.9	4.2	4.8	4.3	3.6	4.2	4.9	4.7	5.0
Question 6	4.3	0.0	4.6	4.7	4.7	4.3	3.4	4.4	4.6	4.9	5.0
Question 7	4.1	4.1	5.0	4.0	4.8	4.7	4.0	4.8	5.0	4.7	5.0
Question 8	3.9	3.4	5.0	4.5	4.5	4.3	3.7	4.6	5.0	4.7	5.0
Question 9	3.9	3.1	4.8	4.2	4.7	4.7	3.6	4.6	4.8	4.6	5.0
Question 10	3.9	3.2	4.4	4.0	4.5	4.7	3.4	4	4.4	4.4	4.8
Question 11	3.7	3.3	4.6	4.3	4.5	4.7	3.7	4.4	4.6	5.1	4.8
Question 12	4.0	3.4	4.4	4.2	4.7	4.3	4.0	3.6	4.4	4.7	5.0
Question 13	3.4	2.9	4.8	4.2	4.7	4.3	3.6	4.4	4.8	4.6	5.0
Question 14	3.1	2.8	4.8	4.0	4.5	4.7	3.4	4.6	4.8	4.6	5.0
Question 15	3.4	4.0	4.4	4.0	4.5	4.7	3.9	4.6	4.4	4.4	4.2
Question 16	3.6	3.8	5.0	4.7	4.5	4.7	3.9	4.2	5.0	4.7	5.0
Question 17	3.6	4.4	4.9	4.5	4.8	4.3	4.0	4.6	4.9	4.3	5.0
Question 18	3.4	2.9	4.9	4.2	4.5	4.3	3.7	4.4	4.9	4.4	5.0
Question 19	3.6	2.9	4.9	4.2	4.7	4.3	3.6	4.8	4.9	4.1	5.0
Question 20	4.1	3.8	5.0	4.0	4.7	5.7	4.4	4.8	5.0	4.6	4.5
Question 21	3.7	3.6	4.5	4.7	4.7	5.7	4.3	4.2	4.5	4.4	4.5
Question 22	3.6	3.2	4.9	4.7	4.7	4.7	4.1	4.2	4.9	4.6	5.0
Question 23	3.4	3.6	4.6	4.7	4.7	4.7	3.9	4.4	4.6	4.7	5.0

The feedback system also allows teachers to add questions to the questionnaire, thus collecting feedback for their own purposes. This, combined with the open feedback field in all of the questionnaires, supports the teachers' own professional development. Students are motivated to give feedback by preparing course-specific questions in addition to the general ones.

The feedback for each course is recapitulated by the Quality Unit every semester with a general reporting form. The reports are forwarded to the head of degree program and to the quality manager, who then submits the reports to the Dean before the performance and development discussions between the university management and faculties. The units' performance target negotiations deal with student feedback, and if the average assessment for a course is very low (e.g. 2.5 or lower), the Dean will intervene and discuss about the topic with the College concerned. In addition, the pass/fail record of each course is followed and discussed in the meeting between the heads of the degree programs organized by the Dean.

The students of degree program make a summary of the open feedback for each course. A conversation of the feedback between the student and the teachers of the courses and the head of the degree program is organized twice a year (*Appendix [PHYS 11](#)*).

The university teaching studies and the Teacher's Quality Manual provide the teachers with methods to develop their courses.

6.6 Evaluation of the success of the degree program

The College management and heads of departments shall ensure that the education provided by the university is efficient and of a high standard. Success of the degree program is evaluated in many ways, which are described in the following.

6.6.1 Competence of graduates

Skills and knowledge accumulated by students during the entire education process are demonstrated in a project, which is prepared by all Bachelor's level students. The distribution of the grades of the B.Sc. in Physics is demonstrated in Tables 6.4. In 2014, the most common project grade has been 4. The students who had started to study in a university before autumn 2005 had a right to continue studies in the Master's degree programs without a B.Sc. degree and had to graduate not later than in July 2010. This might be the main reason for some low grades in 2009 and 2010 (*Appendix [ZCS 05](#)*).

Table (6.4). The grades of the Project Thesis in 2014

Grade of graduate project	2	2.5	3	3.5	4	4.5	4.75	5
no/2014	1	1	3	7	11	3	1	0

The distribution of the final grade (weighted mean) of the graduates in 2010- 2014 is presented in Table 6.5

Table (6.5). Final grades of the graduates:

Degree Program	0 – 1.99	2 – 2.74	2.75 – 3.74	3.75 – 4.49	4.5 - 5
----------------	----------	----------	-------------	-------------	---------

Bachelor year 2011/2010	1 st Semester	=	=	=	=	=
	2 nd Semester	0	0	4	3	0
Bachelor year 2012/2011	1 st Semester	0	0	2	1	0
	2 nd Semester	0	1	0	2	0
Bachelor year 2013/2012	1 st Semester	0	3	13	3	1
	2 nd Semester	0	7	6	0	0
Bachelor year 2014/2013	1 st Semester	0	2	4	0	0
	2 nd Semester	=	=	=	=	=

Quantitative results of a degree program

In four year, eight semesters the bachelor courses covers the basic physics area. The first B.Sc. graduated in 2010/2011, the number of graduates has been rather stable during the last four years. The information on the number of graduates and the time in which their degree was completed are in table (6.6). There are number of graduates are completed his degree at four year. In other hand, there are other graduate completed his degree after five or more year (*Appendix ZCS 09*).

Table (6.6): Number of graduate during the years 2010 - 2014

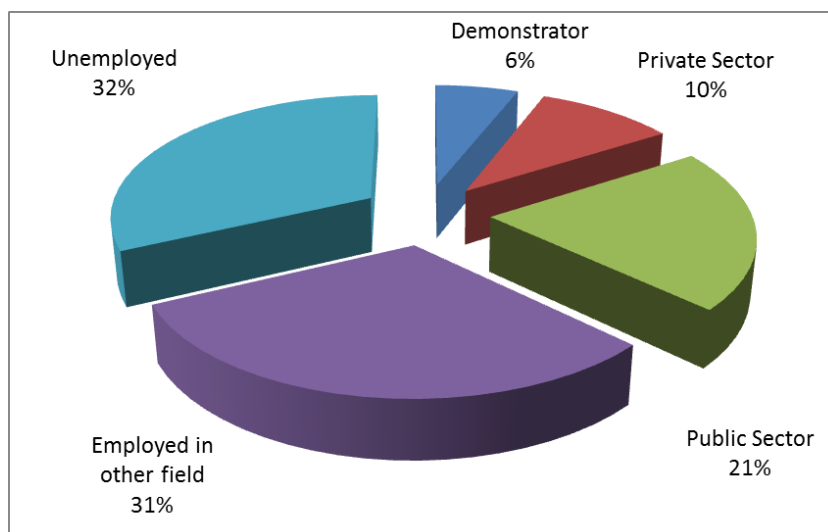
Year	Semester	Graduate numbers
2011/2010	1 st semester	=
	2 nd semester	7
2012/2011	1 st semester	3
	2 nd semester	3
2013/2012	1 st semester	20
	2 nd semester	13
2014/2013	1 st semester	6
	2 nd semester	-----

The graduate employ ratio was survived in the interval from 2011 – 2013. It was tabulated in the table 6.7 and diagram (Fig. 6.1.)

Table (6.7): The graduate employ ratio.

Number of graduate occupied	Employed				Unemployed
	Work in physics field			Work in other field	
	Demonstrator	Private sector	Public sector		
	3	5	11	16	17
Percentage	6%	10%	21%	31%	32%
Total percentage	68%				32%

Fig (6.1): Employed and unemployed ratio



Staff-student ratio

The table below presents the teaching staff ratios for the degrees organized by the Majmaah University, Zulfi College of Science which hosts the Physics Department. The teaching staff comprises Professors, Associate professors, Assistant Professors, and Lecturer.

Table (6.8). Students per teacher per year Zulfi College of science Physics Department.

	2014	2013	2012	2011
Student-staff ratio	7.8	8.8	9.7	12.5

Satisfaction in the education

As a part of this self-assessment report, student feedback of the degree programs is in ([Appendix PHYS 11](#))

Satisfaction in Zulfi College of science (ZCS) education is surveyed among ZCS graduates at the time of graduation, after five and fifteen years in the world of work, and among their employers. Graduate feedback is collected from all ZCS students at the time of their graduation (Table 6.9) both Finnish and international students. The feedback is gathered together annually in February March, and the results are reported on the university level on the intranet and divided and delivered into the degree program. Quality manager is responsible for this process together with Student Services.

Table (6.9). Feedback from graduated B.Sc. of Science in (2011 -2014)

Satisfaction of the graduate on...	2014	2013	2012	2011

Course content	3.6	3.5	3.0	2.7
Professional abilities	3.5	3.6	3.1	2.9
Transferable skills	3.7	3.3	3.2	3.2
Knowledge on my own field	3.9	3.6	3.1	3.1
The ability to apply theoretical knowledge into Practice	3.8	3.3	3.0	3.2
Study guidance and atmosphere in the Department	3.6	3.4	2.9	3.0

APPENDICES:

- **Zulfi, College of Science:**

[ZCS 01. Zulfi, College of Sciences Strategy Plan 2013](#)

[ZCS 02. Teacher's Quality Manual](#)

[ZCS 03. Quality Manual for Studying and Learning](#)

[ZCS 04. GPA Method](#)

[ZCS 05. Project Handbook](#)

[ZCS 06. Excellence Awards for employee](#)

[ZCS 09. Alumni Unit Guide](#)

[ZCS 11. Quality Manual](#)

- **Physics Program:**

[PHYS 10. Course Feedback \(example\)](#)

[PHYS 11. Statement of Students Cooperative International Universities](#)

[PHYS 13. Diploma Supplement \(Example\)](#)

[PHYS 15.b Indirect PLO Assessment](#)

[PHYS 16. Staff C.V.](#)

7 Documentation and Transparency

7.1 Relevant regulations

To receive the Degree of Bachelor of Physics from College of Science, at least 80% credit hours including the Bachelor's project, have to be passed in this university (total degree 137 credits). The head of the degree program makes the decision of the courses included in the degree of an individual student.

Detailed regulations of the degree are given in the University Regulations on Education and the Completion of Studies (*Appendix [MU 03](#)*).

7.2 Diploma Supplement

Diploma supplement is formulated by following the directions of the College Council and always attached to the B.Sc. degree certificate (*Appendix [PHYS 13](#)*). Diploma supplement is attached to the degree certificate along with the transcript of records. It includes the information about the College, Courses included into degree, as well as the grades of the Courses and the structure of the degree (*Appendix [MU 03](#)*). Compulsory, elective and free subjects are given an overall grade. The overall grade is the average of all courses completed by the student in the subject in question, weighted according to the credit hours of each course (*Appendix [ZCS 04](#)*).

APPENDICES:

- ***Majmaah University:***
[MU 03. Implementation Rules of Undergraduate Study and Examinations.](#)
- ***Zulfi, College of Science:***
[ZCS 04. Calculation of the Final Grade \(GPA method\)](#)
- ***Physics Program:***
[PHYS 13. Diploma Supplement \(Example\)](#)

8 Equal opportunities and diversity

The Careers and Employment Service at Majmaah University promotes and celebrates this diversity both as a service provider and in its interaction with students and graduates to ensure that all students are able to access employment opportunities whilst also recognising that some students and graduates may experience barriers when looking for employment.

Majmaah University is committed to supporting mass participation in higher education as part of its contribution to equality and social justice.

The University provides quality higher education through a curriculum which embodies the central values of equality.

Majmaah University aims to increase learning opportunities for all students especially for those who have traditionally been denied access to higher education.

The Careers and Employment Services' commitment to equal opportunities

Majmaah University Careers and Employment Service (CES) endeavours to support this mission statement by Promoting equality of opportunity as a provider of services to all Majmaah University students and graduates. Promoting equality in its interaction with employers and outside agencies

8.1 Services to students and graduates

Careers and Employment Service are committed to offering a high quality service to clients and supporting their transition into the world of work. They aim to help all students and graduates compete on equal terms in the marketplace by the following (*Appendix ZCS 09*):

1. guide students and graduates through their career choices and the application process for jobs and further study
2. offer guidance regarding strengthening and enhancing these applications
3. give advice and support to counter any discrimination faced.

8.2 Access to guidance services

CES is committed to developing a service which can be accessed easily by all Majmaah University students and graduates

In this regard, CES aim to make our services disability friendly and to offer services at times to meet the needs of all students.

CES therefore runs an open access Careers Resource Area on the Zulfi Campus; an evening service by appointment and an e-mail guidance service.

8.3 Countering discrimination

Graduate employment and training has become an increasingly competitive area and students from a non-traditional background can often feel disadvantaged when making career choices and entering the job market.

If you feel that CES has not addressed issues of age, gender, color, race, nationality, ethnic or national origin, religion, or disability in any of the services we provide to students and graduates, then please let us know.

8.4 The College's Commitment

No prospective or actual student or member of staff will be treated less favourably than any other, whether before, during or after their study or employment at Zulfi College of Science on one or more of the following grounds, except when such treatment is within the law and determined by lawful requirements: age; colour; disability; ethnic origin; marital status; nationality; national origin; parental status; race; religion or belief; gender; or length or type of contract (e.g. part-time or fixed-term).

With regard to students, this policy applies to (but is not limited to) admissions, to teaching, learning and research provision, to scholarships, grants and other awards under the College's control, to student support, to accommodation and other facilities, to health and safety, to personal conduct and to student complaints and disciplinary procedures.

The College will also avoid, in the fields of employment, education and provision of goods, facilities, services and premises the use of ostensibly neutral criteria which have disproportionate adverse impact on those of a particular age; colour; disability; ethnic origin; marital status; nationality; national origin; parental status; race; religion or belief; gender; or length or type of contract (e.g. part-time or fixed-term).

In order to realize its commitment, the College will:

- promote the aims of this policy;
- be proactive in eliminating discrimination, including harassment and bullying, through
- training and the production and dissemination of codes of practice and guidance;
- have regard to its obligations under relevant legislation, including the requirement to
- carry out impact assessments in certain areas, and for its policies, codes of practice and
- guidance to mirror the same and be changed to meet the demands of new legislation;
- whilst acknowledging that they are not legally binding, have regard to any Codes of
- Practice issued or adopted by the Commission for Equality and Human Rights;
- make this policy, as well as all codes of practice and guidance available to all staff and
- students;
- regularly review the terms of this policy and all associated codes of practice and
- Guidance.

8.5 Responsibilities

8.5.1 College's Council

The College's Council is the main body in College dedicated to delivery of the College's diversity and equal opportunities objectives. The Council is convened by the Bursar and meets

once per Term, regularly in seventh week and reporting to the third Governing Body meeting of Term. The university Terms of Reference read as follows:

It is responsible for the development, implementation, monitoring, prioritization and review of policies, procedures and practice to support the College's Equal Opportunities Policy in relation to employees (Fellows and staff) students, visitors and others closely associated with the College.

8.5.2 Departments

Heads of departments are responsible for the day to day Implementation and delivery of the College's objectives for diversity and equal opportunities in their respective department.

8.5.3 The Domestic Bursar

The Domestic Bursar has primary responsibility for facilitating the accessibility of the College's buildings for disabled users.

8.5.4 All staff and students

This policy applies to all members of the College, both students and staff, whether permanent, temporary, casual, part-time or on fixed-term contracts, to job applicants, to student applicants, current and former students, to associate members and to visitors to the College.

These members of the College have a duty to act in accordance with this 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 College 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 College 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.

8.5.5 Complaints

Zulfi College of Science takes serious action for any breach of this policy. Disregard of this policy may result in disciplinary action up to and including dismissal. The College encourages any prospective or current student or member of staff who has a complaint concerning a breach of this policy to bring such a complaint to the College. Any member of the College may use the grievance procedures given in the Student Handbook for new Fellows to complain about discriminatory conduct. The College is concerned to ensure that staff feel able to raise such grievances and no individual will be penalized for raising such a grievance unless it is untrue and made in bad faith (*Appendix [MU 04](#)*).

8.6 Corrective Procedures

8.6.1 Discipline

Any employee or student who harasses any other employee or student on any of the grounds covered in this Policy will be subject to the relevant College disciplinary procedure. In serious cases, such behaviour will be deemed to constitute gross misconduct and it may result in summary dismissal in the absence of mitigating circumstances (*Appendix [MU 04](#)*).

8.6.2 Monitoring

Monitoring for the Equal Opportunities Policy is the responsibility of the Equality in College.

8.6.3 Positive Action

Inequalities should become apparent, as a result of the College's monitoring procedures; positive action will be taken to redress the imbalance, including such measures as:

1. advertising jobs in ethnic or male or female interest publications, as appropriate
2. introducing assertiveness training
3. introducing English language training
4. encouraging under-represented groups to apply for suitable training posts
5. Making contact with disabled people via the local Job Centre.

APPENDICES:

- *Majmaah University:*

[MU 04. Discipline Regulations.](#)

[MU 09. Enrollment & Registration Deanship.](#)

Appendices:

There are three types of appendices according to the place that the appendix is published.

Majmaah University Appendices	
MU 01	<i>The statute of the Council of Higher Education and Universities (University Act)</i>
MU 02	<i>Government decree on Majmaah University</i>
MU 03	<i>Implementation rules of undergraduate study and examinations</i>
MU 04	<i>Discipline Regulations</i>
MU 05	<i>Regulations Governing the Promotion of College member</i>
MU 06	<i>Regulations for Universities Financial Affairs</i>
MU 07	<i>Regulations for non-Saudi</i>
MU 08	<i>Anti-Smoking Regulation</i>
MU 09	<i>Enrollment & Registration Deanship</i>
Zulfi College of Science Appendices	
ZCS 01	<i>Zulfi, college of science strategy plan 2013</i>
ZCS 02	<i>Teacher's Quality Manual</i>
ZCS 03	<i>Quality guide for studying and learning</i>
ZCS 04	<i>GPA Method</i>
ZCS 05	<i>Project HandBook</i>
ZCS 06	<i>Excellence awards for employee</i>
ZCS 07	<i>Internal report from Quality Deanship</i>
ZCS 08	<i>Staff HandBook</i>
ZCS 09	<i>Alumni Unit Guide</i>
ZCS 10	<i>Academic Advices</i>
ZCS 11	<i>Quality Manual</i>
ZCS 12	<i>Assessments and Measurements Guide</i>
Physics Department Appendices	
PHYS 01	<i>Program specification</i>
PHYS 02	<i>Program HandBook</i>
PHYS 03	<i>Goals, Objectives and PLO Matrix</i>
PHYS 04	<i>Study Plan</i>
PHYS 05a	<i>Program Learning outcomes with Asiin</i>

PHYS 05b	<i>Program Learning outcomes with I P A</i>
PHYS 06	<i>Courses HandBook</i>
PHYS 07	<i>Teaching Strategies</i>
PHYS 08	<i>Student workload</i>
PHYS 09	<i>Assessment Methods</i>
PHYS 10	<i>Courses feed back</i>
PHYS 11	<i>Students statement</i>
PHYS 12	<i>Annual program report</i>
PHYS 13	<i>Diploma Supplement (example)</i>
PHYS 14	<i>Lab. guide</i>
PHYS 15a	<i>PLO direct assessment</i>
PHYS15b	<i>PLO indirect assessment</i>
PHYS 16	<i>Staff C.V.</i>
PHYS 17	<i>Benchmark</i>
Consistency Matrix Appendices	
MPU01	<i>Consistency between University & college Missions</i>
MPU02	<i>Consistency between College & Program Missions</i>
MPU03	<i>Consistency between program Missions and program Objectives</i>
MPU04	<i>Consistency between Student learning Outcomes and program Objectives</i>
MPU05	<i>Consistency between Program Outcomes and NCAAA Outcomes</i>