

Kingdom of Saudi Arabia

National Commission for Academic Accreditation & Assessment

PHYSICS PROGRAM SPECIFICATION (PPS)

PHYSICS DEPARTMENT FACULTY OF APPLIED SCIENCE AMM AL-QURA UNIVERSITY

2015-2016



Program Specification

For guidance on the completion of this template, please refer to of
Handbook 2 Internal Quality Assurance Arrangements.

Institution: UMM AL-Qura University
College/Department: Faculty of Applied Science - Physics Department

A. Program Identification and General Information

1 Program title and code: Bachelor of Science in Physics (B. Sc. Physics)
2. Total credit hours needed for completion of the program: 142 Credit hours divided to 8 Semesters
3. Award granted on completion of the program: B.Sc. (in Physics)

4. Major tracks/pathways or specializations within the program (eg. transportation or structural engineering within a civil engineering program or counselling or school psychology within a psychology program)

Physics

5. Intermediate Exit Points and Awards (if any) (eg. associate degree within a bachelor degree program)

NA

6. Professions or occupations for which students are prepared. (If there is an early exit point from the program (eg diploma or associate degree) include professions or occupations at each exit point)

1. Continue higher educations in physics, leading to MSc. and PhD. Degrees
2. Work in research centres and universities
3. Work in public and private sectors school for education of physics courses
4. Work as a machine operator and/or a data analyst in one of the following industrial regions: Quality control labs. Electric power stations. Water stations.
5. Standards and measurements bureau Petroleum ministry. Manufactures of plastics, steel, textile, glass, ceramics, rubber,

electronics, semiconductors and solar cells			
7. (a) New program	No	Planned starting date	1981
(b) Continuing program	Yes	Year of most recent major program review	1433
<p>Organization involved in recent major review (eg. internal within the institution,</p> <p>Quality assurance, Curriculum and courses Committee</p> <p>Accreditation review by:</p> <p>Plans and Programs of Study management of Umm Al-Qura University</p>			
<p>8 Name and position (eg department chair person) of faculty member managing or coordinating the program.</p> <p>Dr Hatem Alamri Head of Physics Department</p>			
<p>9. Location if not on main campus or locations if program is offered in more than one location.</p> <p>Umm Al-Qura University in Elabdia and Elzaher Branch</p>			

B Program Context

1 Explain why the program is needed.

a. Summarize economic reasons, social or cultural reasons, technological developments, national policy developments or other reasons.

To follow a wide variety of careers that include scientific research, industry, educational and higher educational

b. Explain the relevance of the program to the mission of the institution.

Physics program are provision of higher education and graduate studies to enable citizens to contribute to the development of their country in natural and applied sciences. Moreover, it contribution to enhancement of scientific research by conducting and encouraging research and establishing research centers, and suggesting means for provision. All these are agreement with the mission of the institute.

2. Relationship (if any) to other programs offered by the institution / college / department.

a. Does this program offer courses that students in other programs are required to take?

Yes

No

√

If yes, what should be done to make sure those courses meet the needs of students in the other programs?

b. Does the program require students to take courses taught by other departments?

Yes

No

√

If yes, what should be done to make sure those courses in other departments meet the needs of students in this program?

Physics department collaboration with department of Mathematics to taught some related courses which designed and offered by them to fulfill the requirements of departmental of Physics program. The syllabus of these courses are reviewed by the Curriculum and Courses Committee of the department to ensure compliance to the department,s needs. The department approve the syllabus of the courses offered by the other departments

3. Do the students who are likely to be enrolled in the program have any special needs or characteristics that should be considered in planning the program? (eg. Part time evening students, limited IT or language skills)

Yes

✓

No

If yes, what are they?

English Language Skills and Computer programs

4. What should be done in the program to respond to these special characteristics?

Arranging meeting with English Language Center to sort out what is best for the student, and to increase their oral and written communication skill in English and strengthen the basic knowledge and skill of students in basic sciences, mathematics, and IT.

C. Mission and Goals of the Program

1. Program Mission Statement

Generate the quality and giving to student the possibility to acquire the scientific and intellectual expertise to serve and developed the environmental of community. Program of physics is promoting an excellence in physics education by applying the National Qualification Framework of Higher Education through Knowledge such as facts, concepts, theories and actions, Cognitive skills, Relationship and Responsibility, Communication skills and collaborating with society. This mission leads the students at the department to the excellence in physics and distinction in higher education and scientific research through prepare graduates with high scientific and technical skills who are capable of serving and developing the community. Physics program mission is in agreement with the mission of Faculty of Applied Science and reflect the task of UQU's mission

2. List any major changes or strategic new developments planned for the program within the next three to five years to help achieve its mission. For each change or development describe the major strategies to be followed and list the indicators that will be used to measure achievement.

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

Major Changes or Developments	Strategies	Indicators
✓ Enhance the fundamental knowledge in Physics	<ol style="list-style-type: none"> 1. Know physics theories 2. Understand the physical phenomena and their mechanisms 3. Understand and apply physics laws 	<ol style="list-style-type: none"> a) The method of teaching physics b) Lectures c) Library d) Text books e) Discussions
✓ developing and providing high quality undergraduate learning in Physics education	<ol style="list-style-type: none"> 1. Attract top quality students into Physics program. 2. Continually improve quality of Physics curriculum and the method of delivery. 3. Maintain low faculty to student ratio. 4. Align Physics program with the market needs. 	<ol style="list-style-type: none"> a) Interaction between the staff of physics and the students. b) Expose the difficult in physics. c) Staff reduce the difficulties of the student
✓ Develop and utilize effective skills in Physics	<ol style="list-style-type: none"> 1. Lectures should have target and specific objectives 2. Development and implementation of logical experimental procedures 3. The analysis and interpretations of data using appropriate theory 4. Demonstrating effective problem solving techniques 	<ol style="list-style-type: none"> a) Evaluation based on the recalling of facts and affective b) Laboratories c) Lectures d) Solving problems
✓ Provide foundation for	<ol style="list-style-type: none"> 1. The student uses 	<ol style="list-style-type: none"> a) Project

basic scientific research in Physics.	<p>computer tools to collect required topics</p> <ol style="list-style-type: none"> 2. Constructive Feedback 3. Management and organization 	<ol style="list-style-type: none"> b) Presentations c) Report writing d) Literature Surveys
✓ Cooperate as individuals or in groups with the society to solve Physics related problems.	<ol style="list-style-type: none"> 1. Contributing ideas toward group task 2. Contributing ideas toward group task 3. Students conduct with their class fellows teachers and administrative staff 4. Correlate physics laws and principles with natural phenomena 	<ol style="list-style-type: none"> a) Seminars b) Individual task c) Group task d) Project e) providing suitable environment for virtual classrooms and means of communication between students themselves and with faculty members
✓ Emphasis on the theoretical and practical aspect of the subject.	<ol style="list-style-type: none"> 1. Theory taught in physics could be tested and trusted to be consistent at any considerable situations 2. Enhance communication skill of students. 3. -Increase awareness to global issues, social responsibilities and the need of lifelong learning. 	<ol style="list-style-type: none"> a) Existence of lists of numbers and grades students papers and tests within the department b) Students test and watch grades quizzes across e-learning site c) Students with E-Services to facilitate their communication process with various sectors of the university

D. Program Structure and Organization

1. Program Description:

Courses each semester, credit hour requirements and department/college and institution requirements from Prep Year to graduation are listed below

Course plan for physics

Requirements	No. of courses	Credit hours	Actual hours
University requirements	13	29	29
College requirements	6	20	20
Dept- requirements	28	93	93
Total	47	142	142

Compulsory requirements:

1- University requirements are 29 credit hours, as follow

Course No.	Course Code	Course name	Credit hours
601101	SLM	Islamic culture (1)	2
601201	SLM	Islamic culture (2)	2
601301	SLM	Islamic culture (3)	3
601401	SLM	Islamic culture (4)	2
605101	SLM	Holly Quran (1)	2
605201	SLM	Holly Quran (2)	2
605301	SLM	Holly Quran (3)	2
605401	SLM	Holly Quran (4)	2
50101	ARB	Arabic language	2
102101		Profit history	2
705102	NGM	English language skills(1)	3
705103	NGM	English language skills(2)	3
705101	NGM	English language	2
Total			29Hr

2-Compulsory courses from college science

Course No.	Course Code	Course name	Credit hours
402101	CHEM	Chemistry 101	(3+1)
404101	MATH	principle in Math 101	4
404102	MATH	principle in Math 102	4
404140	MATH	Linear algebra	4
404101	BIOL	Plant-biology	2
404102	BIOL	Animal-biology	2
Total			20Hr

3- Department's compulsory requirements (93 credit hours):

Course No.	Course Code	Course name	Credit hours
403101	PHYS	General physics101	4 (3+1)
403121	PHYS	Electricity and magnetism	4 (3+1)
403102	PHYS	General physics102	4 (3+1)
403240	PHYS	Method in theatrical physics (1)	3
403242	PHYS	Method in theatrical physics (2)	3
403346	PHYS	Method in theatrical physics (3)	2
403241	PHYS	Classical mechanics (1)	4
403245	PHYS	Classical mechanics (2)	3
403332	PHYS	Electromagnetism (1)	3
403231	PHYS	Optics	4(3+1)
403285	PHYS	Instrumentation	3
403212	PHYS	Thermodynamic	3
403342	PHYS	Electromagnetism (2)	3
403344	PHYS	Quantum mechanics(1)	4
403213	PHYS	Statistical thermodynamic	3
403361	PHYS	Nuclear physic 1	4(3+1)
403345	PHYS	Quantum mechanics(2)	3(2+1)
403461	PHYS	Nuclear physics 2	3(2+1)
403423	PHYS	Electronics	4)
403371	PHYS	Solid state physics (1)	3
403383	PHYS	computing	2
403463	PHYS	Nuclear Technology	2
403472	PHYS	Solid state physics (2)	2
403432	PHYS	advanced Optics	3

403253	PHYS	Atomic physics (1)	4(3+1)
403471	PHYS	Semiconductors physics	3
403462	PHYS	Radiation Physics	3
403382	PHYS	Workshop	2
403493	PHYS	Research Project	5

4-Distribution of Courses on Semesters

First Semester

Course Name	Course Code	Prerequisite
General Physics 1	403101-4	
General Chemistry 1	402101-4	
Differentiation and Integration 1	404101-4	
English Language	705101-2	
Islamic Culture 1	601101-2	
Quran 1	605101-2	
Total		18 Hr

Second Semester

Course Name	Course Code	Prerequisite
General Physics 2	403102-4	404101+403101
Electricity and Magnetism	403121-4	404101+403101
Differentiation and Integration 2	404102-4	404101
Algebra Fundamental	404140-4	404101
General Biology Plant	401101-2	
General Biology Animal	401102-2	
Total		20 Hr

Third Semester

Course Name	Course Code	Prerequisite
Heat and Thermodynamic	403212-3	404102+402102
Optics	403231-4	404102+402102
Theoretical Physics 1	403240-3	404102
Classical Mechanics 1	403241-4	404102+402102
Measurements	403285-3	403121

Arabic Language	501101-2	
Total		19 Hr

Fourth Semester

Course Name	Course Code	Prerequisite
Statistical Thermodynamic	403213-3	403212
Theoretical Physics 2	403242-3	403240
Classical Mechanics 2	403245-3	403241
Atomic physics	403253-4	403240+40231
Communication in English 1	705102-3	705101
Islamic Culture 2	601201-2	601101
Total		19 Hr

Fifth Semester

Course Name	Course Code	Prerequisite
Electromagnetism 1	403332-3	403242+403285
Quantum Mechanics 1	403344-4	403252+403242
Theoretical Physics 3	403346-2	403242
Solid State 1	403371-3	403253
Islamic Culture 3	601301-3	601201
Quran 2	605201-2	605101
Total		17 Hr

Six Semester

Course Name	Course Code	Prerequisite
Electromagnetism	403342-3	403332
Quantum Mechanics 2	403345-3	403344
Nuclear Physics 1	403361-4	403344+403253
Workshop	403382-2	403381
Computer	403383-2	403242
Communication in English 2	705103-3	705102
Islamic Culture 4	601401-2	601301
Total		19 Hr

Seven Semester

Course Name	Course Code	Prerequisite
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Electronics	403423-4	403371
Advanced Optics	403432-3	403346+403231
Radiation Physics	403462-3	403361
Semiconductor	403471-3	403371
Project	403493-5	Agree department
Quran 3	605301-2	605201
Alsera Alnabaweia	102101-2	
Total		22 Hr

Eights Semester

Course Name	Course Code	Prerequisite
Nuclear Physics 2	403461-3	403371
Nuclear Technology	403463-2	403346+403231
Solid State 2	403372-2	403361
Quran 4	605401-2	403371
Total		9 Hr

Total Credit hours 142

2. Required Field Experience Component (if any, e.g. internship, cooperative program, work experience).

Summary of practical, clinical or internship component required in the program. Note: see Field Experience Specification	
a. Brief description of field experience activity	NA
b. List the major intended learning outcomes for the program to be developed through the field experience	NA
c. At what stage or stages in the program does the field experience occur?	

(eg. year, semester)	NA
d. Time allocation and scheduling arrangement. (Eg. 3 days per week for 4 weeks, full time for one semester)	NA
e. Number of credit hours	NA

3. Project or Research Requirements (if any)

Summary of any project or thesis requirement in the program. (Other than projects or assignments within individual courses) (A copy of the requirements for the project should be attached.)
<p>a. Brief description</p> <ol style="list-style-type: none"> 1. Projects are implemented by all students during seven semester of their final year. 2. Students are supervised closely by a member of faculty, often as part of a team of graduate students and research fellows. 3. The students work in a research faculty laboratories and under their supervision during the preparation of graduation project, which give them a lot of skills in the setup of practical experiments, sample preparation and measurement of optical, electrical and magnetic properties, which qualifies them to work in the industrial and technological sectors. 4. A comprehensive report on the project work is required from the

student, who must present his work in front of an examining committee, not only by the supervisor.

b. List the major intended learning outcomes of the project or research task.

The following are the expected learning outcomes of the Physics projects:

1. Ability to apply knowledge of basic sciences, mathematics, computational methods and Physics principles and explain to general audience the physical principles.
2. Ability to perform analysis, design and evaluation, think creatively about scientific and physics problems and their solutions, both orally and in written.
3. Work effectively in groups as well as individually and be aware of professional and ethical responsibilities
4. Further enhancement of communication skill in English, both oral and written, locate and retrieve scientific information, using modern computer tools.
5. Learn how to collect and classify the required topics using internet communication tools.

c. At what stage or stages in the program is the project or research undertaken? (eg. year, semester)

- I the last Year, Seven Semester

d. Number of credit hours

- 5 Hr

e. Summary description of provisions for student academic advising and

support.

1. Each student will be assigned an academic advisor, providing academic and career advice, and general counseling.
2. Each student will be required to meet his advisor weekly
3. The department will provide support to the students in the form of hosting extracurricular activities, field trips, and seminars by inviting guest speakers, and providing an interactive learning environment.
4. Head of physics department will be available to meet the students and listen to their academic problems and projects.

f. Description of assessment procedures (including mechanism for verification of standards)

1. A self-assessment of the Graduation Project processes will be undertaken every two years to identify areas of weaknesses that require attention and are being improved gradually.
2. Enhancements in processes will be presented to the department council at the beginning of the next academic year
3. Written project report evaluated by the examiners.
4. The student defends his project before the examiners by presenting his work followed by relevant question and answer session.
5. Finally the deserving grade is awarded to the student.

4. Learning Outcomes in Domains of Learning, Teaching Strategy and Assessment Methods

Program Learning Outcomes :

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

Teaching strategy:

The method of teaching physics discover the learning efficiency and effectiveness takes place during explanation and discussion. Interaction between the staff of physics and the students. Each lecture should have target and specific objectives. Emphasis is placed on the theoretical and practical aspect of the subject. The teaching methods applied in the Degree Program in Physics include the followings: Lectures, Classroom Exercises, Workshops, Consultation Periods, Laboratory work and Projects.

Assessment Methods:

Student performance in each course is evaluated by the instructor, culminating with the assignment of a grade for this course. These assignments generally comprise some combination of examinations, quizzes, homework, and/or laboratory reports. Projects and/or oral presentations are required for some courses. Therefore, the methods of evaluating student performance are summarized as: Quizzes, Case Study Reports, Discussion Groups, Midterm Exams and Final Exam.

On the table below are eighteen learning outcomes classified into the five NQF Learning Domains. Physics program learning outcome is verified by supporting teaching strategies and using appropriate assessment method. For the table below, first column, is the suitable and measurable learning outcomes required in each of the learning domains. Second column, describe the supporting teaching strategies. Third, is appropriate assessment methods that measure and evaluate the learning outcome.

NQF Learning Domains and Learning Outcomes		Teaching Strategies	Assessment Methods
A	Knowledge		
a1	Understand relevant of knowledge and theory in other related disciplines and professional fields	1.Lectures. 2.Research. 3.Seminars. 4.Library. 5.Class discussions.	1.Quizzes. 2. Homework. 3.Tests 4.Project . 5. Exams.
a2	Recognize facts, principles and concepts of classical physics (mechanics, electrodynamics, thermodynamics, vibrations, waves and optics) and are familiar with the fundamentals of quantum, atomic, nuclear, and solid state physics.		
a3	Describe concepts, Procedures of matching the principles and the concepts to analyze problems within specific core areas and theories.		
B	Cognitive Skills		
b1	Apply skills when asked (discuss how to overcome educational problems)	1.Lectures 2. Solving problems 3.Discussions using internet. 4.Laboratory work.	1.Practical 2.Presentation 3.Seminars 3.Discussions 4.Reports 5.Oral tests 6.Written tests
b2	Gain mental calculating skills by training them on it		
b3	solve problems in Physics by using suitable mathematical principles		
b4	Analyze and interpret quantitative results		
b5	Gain the skills of solving scientific problems		

	related to industrial problems		
C	Interpersonal Skills & Responsibility		
c1	show Responsibility for self-learning to be aware with recent developments in Physics	1.Teaching assignments 2.Group assignments 3.Lab. 4.work in a group 5.Time anagement	1.Oral exams. 2.Lab. Exam 3.Helping each other in doing their experiments. 4. Giving clear and logical arguments
c2	Work effectively in groups and exercise leadership when appropriate.		
c3	Act as professional and responsible person.		
c4	Recognize life-long learning is a necessity as well as a responsibility of every Graduate		
D	Communication, Information Technology, Numerical		
d1	Communicate effectively in oral and written form	Lecturing. 1.Computer labs. 2.Softwares. 3.Multimedia 4.Library. 5.Internet. 6.Practical 7.Training	Surveys 1.Practical exams. 2.Written exams. 3.E learning 4.Homework
d2	collect and classify the material for a course		
d3	Use basic physics Terminology in English		
d4	Acquire the skills to use the internet communicates tools.		
E	Psychomotor		
e1	Use a perfect experimental tools to solve Physics problems in the Labs	1. Library. 2.Internet. 3.Practical 4.Training	1.E learning 2.Practical exams.
e2	Employ software skills.		

Program learning outcomes were established by a process that involved extensive discussions with faculty, students, Alumni, and accreditation Committee. The program learning outcomes support the program educational objectives.

5. Admission Requirements for the program

An applicant for physics program should be admitted under the Statute of the Higher Educations & Universities and rules of Study and Examinations of Higher Education at Umm Al-Qura University conditions The admission will be accept in physics program as per their marks in secondary school certificate , the aptitude test and subject test. Just the student accept in the program the next conditions should be applied

- 1- Students who fail courses that constitute the minimum number of credit hours in one semester or more than the courses offered in one level are supposed to retake the failed courses.
- 2- Students who fail courses that constitute less than the minimum number of credit hours in one semester are supposed to the retake the failed courses and add more courses from the next level according to the following:
 - Enrolment in the courses is within the study plan and timetables
 - Semester load has to be linked to the students' GPA but no less than 12 credit hours
 - No conflicts in students' schedules
 - Students who cannot enrol in courses from the next level due to conflicts or prerequisites may take courses from next levels (see item
 - Students who cannot enrol in the minimum number of credit hours may take courses that are available even if they are less than the minimum number of credit hours.

3. Students may take courses from the next two consecutive levels.
4. Enrolment is automatic (without prior request from the students) and all schedules are to be ready before commencement of study.

6. Attendance and Completion Requirements

1. The undergraduate curriculum in physics program provide academic content taught in a specific course that agree with the National Calcification Framework (NQF).
2. Success in a course is usually based on the combination of grades awarded to term work and final examination.
3. Each course has a total of 100 points. Out of this, the instructor may allocate 40% to 60% marks to the term work consisting of quizzes, homework, term projects and mid-term or other periodic assessments while the remainder is allocated to the final examination.
4. The rubrics used for the grading system of Umm Al-Qura University . Grade of In Complete (IC) is given to the student if the course requirements are not completed by the student. This is usually allowed in courses that require a project to be completed by the students. It is awarded only on the recommendation of the instructor and approval of the Department Council. The student getting IC must complete the requirements during the next semester otherwise the IC automatically changes to F. Some courses need more than one term to complete the requirements particularly the Graduation Project. For these courses, the

student gets In Progress (IP) grade. IP grade does not require the approval of the departmental council. Student getting an IP is required to continue the work and appear for the assessment when the work is completed.

5. Students are allowed to withdraw from studying one semester without failing that semester if he/she submitted a valid excuse to the college dean five weeks before the final examinations. Those students studying in an academic year system may apply for withdrawal eight weeks before final examinations. Committee for student academic problems based on a recommendation from the dean may make exceptions to those deadlines. Withdrawing students will be given (W) grade and this semester is counted within the period of graduation.
6. To accept student's excuse to withdraw, the student must be regular in attending classes before the submission of the excuse as will be explained in article 15 (By- Laws of Undergraduate Study and Examinations and Umm Al-Qura University Implementation Rules)
7. Students are automatically enrolled in the following semester.
8. Female students must bring in a parent consent to the withdrawal

E. Regulations for Student Assessment and Verification of Standards

What processes will be used for verifying standards of achievement (eg check marking of sample of tests or assignments? Independent assessment by faculty from another institution) (Processes may vary for different

courses or domains of learning.)

Student performance in each course is evaluated by the instructor, culminating with the assignment of a grade for this course and by independent assessment by faculty from another institution. The number and types of graded assignments will vary according to what is most appropriate for the course in question. These assignments generally comprise some combination of examinations, quizzes, homework, and/or laboratory reports. Projects and/or oral presentations are required for some courses. The final year projects are graded by a group of college members, not only by the supervisor.

F Student Administration and Support

1. Student Academic Counselling

Describe arrangements to be made for academic counselling and advice for students, including both scheduling of faculty office hours and advice on program planning, subject selection and career planning (which might be available at college level)

1. Each faculty member (an academic supervisor) will be assigned a group of students for counselling and advising.
2. A student will be required to meet his academic advisor during his office hours and the first visit being before the registration.

3. Announce the office hours for each faculty member to be part of the academic supervision and scientific help which a student can visit for receiving counselling and advising.
4. The availability of full information about the department and its members, and their contact information (website).

2. Student Appeals

Attach regulations for student appeals on academic matters, including processes for consideration of those appeals.

1. Student who wishes to appeal an examination result must do so in writing to the head of the department, setting out in full the grounds for the appeal.
2. Upon receipt of a written appeal, the head of the department will refer the matter to the Appeals committee. The appeal committee will handle all communications with the student and the faculty.
3. If necessary, a request should be send to the college council to have the relevant marks rechecked and, within a specific time.
4. Each student repeats appealing regarding the proven ineligibility appeal should be referred to the disciplinary committee
5. Students may postpone study before the commencement of the semester till the end of the first week of study after they provide a valid excuse to the head of the department and college dean.
6. The postponed period is not included in the period required for

completion of the program degree.

G. Learning Resources, Facilities and Equipment

1a. What processes are followed by faculty and teaching staff for planning and acquisition of textbooks, reference and other resource material including electronic and web based resources?

1. The requirements of text book/reference book and other materials for teaching are identified by a committee after reviewing the appropriateness of the material by concerned faculty and approval in the departmental and higher academic councils.
2. The Faculty of applied Science and University Purchasing and providing the necessary books.
3. Writing laboratory manuals and some other textbooks by faculty and reviewing them proficiently before approval

1b. What processes are followed by faculty and teaching staff for planning and acquisition resources for library, laboratories, and classrooms.

1. Assigning resources through a committee after reviewing by faculty and approval in the departmental and higher academic councils
2. Participating in the University's database that allows the access to most international publishers.
3. Posting courses and manuals on the webs

2. What processes are followed by faculty and teaching staff for evaluating

the adequacy of textbooks, reference and other resource provisions?

1. The instructor, proposing the text book for a course, is asked to review at least two text books on the subject and submit justifications for the chosen text book.
2. Committees for inspecting the current textbook and compare it to the most recent textbooks in the field. The new book selected will be approved by departmental and proving the expensive reference books in the University Library to ease the financial burden on the students

3. What processes are followed by students for evaluating the adequacy of textbooks, reference and other resource provisions?

1. Students have the opportunity to evaluate textbooks within student course experience survey as well as annual student focus group
2. Asking students in class room or through questionnaire of evaluating a course after course completion

4. What processes are followed for textbook acquisition and approval?

1. Assigning textbooks through a committee and approved in the department , faculty and higher academic councils.
2. Textbooks are made available to students through the University Bookstore. Departments submit their revised textbook lists at the end of the academic year before summer to be made available by beginning of following year.

H. Faculty and other Teaching Staff

1. Appointments

Summarize the process of employment of new faculty and teaching staff to ensure that they are appropriately qualified and experienced for their teaching responsibilities.

1. Department announcements on the university's website for available vacancies.
2. A departmental faculty application committee inspects the resumes of the applicants and checks on their experience.
3. Applicants are interviewed by senior academic administrators
4. Presentations on the topics of interest are made in the department and evaluated by the departmental council.
5. Employ the the best distinguished graduates of the department .
6. Distinguished graduates are employed as instructors in the department then they are given scholarships for MS and PhD degrees after that they are employed as faculty members after verification of their credentials

2. Participation in Program Planning, Monitoring and Review

a. Explain the process for consultation with and involvement of teaching staff in monitoring program quality, annual review and planning for improvement.

1. Current programs are reviewed within the divisions of the department by academic committees in the department such as: course timetables

- committee, scientific research committee, quality committee
2. Department committees are formed to look into the recommendations of various divisions and to make a final proposal
 3. The revised program is discussed and the present the recommendations of these committees in the departmental council before approval.
- b. Explain the process of the Advisory Committee (if applicable)
- Not applicable up now

3. Professional; Development

What arrangements are made for professional development of faculty for:

(a) Improvement of skills in teaching?

1. Conferences and workshops run by international experts are conducted frequently on emerging teaching and learning strategies for various aspects of academic development over the academic year
2. Sponsoring grants for research and innovation in teaching and learning are offered.

b. Other professional development including knowledge of research and developments in their field of teaching specialty?

1. Faculty members attend conferences, workshops, seminars and lectures/talks delivered by the invited experts from the academia and universities.

2. Sponsoring grants for research and innovation in teaching and learning are offered.
3. International collaboration with other universities and research centres and sabbatical leaves to enhance their knowledge of research in the field of teaching

4.Preparation of New Faculty and Teaching Staff

Describe the process used for orientation and induction of new, visiting or part time teaching staff to ensure full understanding of the program and the role of the course(s) they teach as components within it.

1. A new faculty member will be given a copy of the faculty handbook that introduces all university rules, regulations, duties and responsibilities and including the rights, privileges and code of conduct.
2. Conducting awareness workshop for the new faculty members to introduce the department's programme and described its courses beside to introduce the college

4.Part Time and Visiting Faculty and Teaching Staff

Provide a summary of Program/Department/College/institution policy on appointment of part time and visiting teaching staff. (ie. Approvals required, selection process, proportion to total teaching staff, etc.)

Does not exist.

I. Program Evaluation and Improvement Processes

1. Effectiveness of Teaching

a. What processes are used to evaluate and improve the strategies for developing learning outcomes in the different domains of learning? (eg. assessment of learning achieved, advice on consistency with learning theory for different types of learning, assessment of understanding and skill of teaching staff in using different strategies)

1. Faculty members attend training courses in the teaching and learning strategies are conducted by specialists
2. Survey's to Student different courses evaluation, courses specification, course report.
3. Survey's to evaluate the faculty member by the student.
4. Student interviews

b. What processes will be used for evaluating the skills of faculty in using the planned strategies?

1. Faculty's skills will be evaluated through observation of their performance, expertise, Student Course evaluation and their own interests.
2. Self-evaluation by the head of department and the dean of the college
3. to perform a special function through seminars and workshops
4. Peer reviews

2. Overall Program Evaluation

a. What strategies are used in the program for obtaining assessments of the overall quality of the program and achievement of its intended learning

outcomes:

(i) From current students and graduates of the program?

1. Establishing an internet open forum to get student feedback
2. Graduating students surveys and interviews
3. Alumni surveys
4. Polls for the enrolled students and those who graduated from the program

(ii) From independent advisors and/or evaluator(s)?.

1. Self-assessment report reviewed by external experts referees
2. Professional statistical societies assessment

(iii) From employers and/or other stakeholders.

1. Employers questionnaire to know suitability of these graduates to the job, and how good their scientific knowledge is
2. Employment rate and leadership positions

Complete the following two tables.

1. Program KPI and Assessment Table
2. Program Action Plan Table

a. What key performance indicators will be used to monitor and report annually on the quality of the program?

1. Annual self-assessment report
2. Observations and report from the committee supervising the program.
3. Comparison with equivalent programs.

b. What processes will be followed for reviewing these assessments and planning action to improve the program?

1. Annual course reports
2. Reporters and notes about the program and alumni.
3. The observations, notes and reports take in the consideration in the first amendment to modify the program and the regulations

Attachments.

1. Copies of regulations and other documents referred to in template preceded by a table of contents.
2. Course specifications for all courses including field experience specification if applicable..

Dean / Program Chair	Name	Title	Signature	Date
Program Dean or Chair of Board of Trustees Main Campus				
Vice Rector				

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

Table : The mapping between courses and the Program Learning Outcomes

Course code	Course name	a1	a2	a3	b1	b2	b3	b4	b5	c1	c2	c3	c4	d1	d2	d3	d4	e1	e2
403101	General Physics101	☒	☒	☒	☒	☒	☒	☒	☒		☒	☒	☒	☒	☒	☒	☒	☒	
403121	Electricity and Magnetism	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	
403102	General Physics102	☒	☒	☒	☒	☒	☒			☒	☒	☒	☒	☒	☒	☒	☒	☒	
403240	Method in Theatrical Physics (1)	☒	☒			☒	☒	☒		☒	☒	☒	☒	☒	☒	☒	☒	☒	
403242	Method in Theatrical Physics (2)	☒	☒			☒	☒	☒		☒	☒			☒		☒	☒		
403346	Method in Theatrical Physics (3)	☒	☒			☒	☒	☒		☒	☒			☒		☒	☒		
403241	Classical Mechanics (1)	☒	☒	☒			☒	☒	☒	☒	☒		☒	☒	☒	☒	☒		
403245	Classical Mechanics (2)	☒	☒	☒			☒	☒	☒	☒	☒		☒	☒	☒	☒	☒		

Course code	Course name	a1	a2	a3	b1	b2	b3	b4	b5	c1	c2	c3	c4	d1	d2	d3	d4	e1	e2
403332	Electromagnetism (1)	☒	☒	☒			☒	☒		☒		☒		☒	☒	☒	☒		
403231	Optics	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
403285	Instrumentation	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
403212	Thermodynamic	☒	☒									☒					☒		
403342	Electromagnetism (2)	☒	☒	☒			☒	☒		☒		☒		☒	☒	☒	☒		
403344	Quantum Mechanics(1)	☒	☒	☒			☒	☒		☒	☒			☒		☒	☒		
403213	Statistical Thermodynamic	☒	☒	☒		☒	☒	☒		☒				☒	☒	☒	☒		
403361	Nuclear physic 1	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	
403345	Quantum Mechanics(2)	☒	☒	☒	☒			☒	☒		☒	☒			☒		☒	☒	
403461	Nuclear Physics 2	☒	☒	☒			☒	☒	☒	☒				☒		☒	☒		
403423	Electronics	☒	☒	☒	☒		☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	
403371	Solid State Physics (1)	☒	☒	☒			☒	☒	☒	☒			☒	☒	☒	☒	☒		
403383	Computing	☒	☒	☒	☒	☒	☒	☒		☒	☒	☒		☒		☒	☒	☒	☒

Course code	Course name	a1	a2	a3	b1	b2	b3	b4	b5	c1	c2	c3	c4	d1	d2	d3	d4	e1	e2
403463	Nuclear Technology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
403472	Solid State Physics (2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
403432	advanced Optics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
403253	Atomic Physics (1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
403471	Semiconductors Physics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
403462	Radiation Physics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
403382	Workshop	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
403493	Research Project	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>