



## Program Specification

<b>Program Name:</b> BACHELOR OF SCIENCE (B.Sc.) IN PHYSICS
<b>Qualification Level :</b> 6
<b>Department:</b> Physics
<b>College:</b> Science
<b>Institution:</b> Imam Mohammad Ibn Saud Islamic University (IMSIU)

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## A. Program Identification and General Information

### 1. Program Main Location:

Main campus for the Male (Boys) Section.

### 2. Branches Offering the Program:

King Abdullah City for the Female (Girls) Section.

### 3. Reasons for Establishing the Program:

(Economic, social, cultural, and technological reasons, and national needs and development, etc.)

The Physics serves as a fundamental science underlying the study of all natural phenomena, i.e., knowing and understanding the fundamental laws of nature is important for all areas of scientific investigation. The elegant experiments and fundamental theories in Physics have provided much of the advancements in present-day science and technology. From the smallest subatomic particles to the vastness of cosmic expansion, and at the intermediate scales of our lives for solid-state electronics, superconductivity and physical events-Physics profoundly impacts our understanding of nature and our ability to harness its secrets for the progress of human kind.

Several universities in KSA have a good presence in natural sciences and its applications, since their foundation. Consequently, our department offers fundamental roles in making IMSIU successful in its role as an anchor university in Riyadh according to its mission. The Physics department has a clear and published mission statement that is appropriate for higher education and consonant with the mission and strategic priorities of the university and college. The Physics program is designed to offer a solid foundation in both classical and modern Physics. Students take a range of introductory and advanced classes in different physical fields. In addition, the laboratory courses give student valuable skills and knowledge in experimental Physics in connection with theoretical Physics. Moreover, students develop a comprehensive set of valuable skills such as: mathematical and conceptual reasoning, computer skills, leadership and communication skills, problem solving, creativity, synthesizing and applying theory to real world problems. University requirement courses are concerned with religion, moral and historical aspects which enhance the global moral values and professional ethics adapting to scientists and social values.

On the other hand, another aspect of the mission of the Physics Department at IMSIU is to maintain the quality of various other university programs. Indeed, all science study program tracks should contain one or two core course(s) in Physics.

### 4. Total Credit Hours for Completing the Program: (174 Credit Hours).

### 5. Professional Occupations/Jobs:

After completing their B.Sc. in Physics from Imam Mohammed Ibn Saud Islamic University, students will have a wide range of opportunities. These include the following:

N.	Occupation name	Occupation code
1	Weather Forecasting and Environmental Monitoring Station	134906
2	Physicist	211101
3	Quality Specifications and Metrics Specialist	242122
4	Medical Laboratory Technician	321201

5	Professional Trainer	232001
6	Medical statistical Technician	331406
<b>6. Major Tracks/Pathways</b> (if any): <b>N.A.</b>		
<b>Major track/pathway</b>		<b>Credit hours</b> (For each track)
		<b>Professional Occupations/Jobs</b> (For each track)
1.		
<b>7. Intermediate Exit Points/Awarded Degree</b> (if any):		
<b>Intermediate exit points/awarded degree</b>		<b>Credit hours</b>
Diploma of Science in Physics.		<b>87</b>
<p><b>Diploma Learning Outcomes:</b></p> <p><u>Knowledge:</u></p> <p>K1. Recognize a broad set of knowledge concerning the fundamental principles and concepts of physics.</p> <p><u>Skills:</u></p> <p>S1. Apply the concepts, principles and theories involved in addressing issues and problems in a range of different contexts.</p> <p>S2. Critically evaluate knowledge and use it to provide innovative solutions to contemporary issues and problems in physics.</p> <p><u>Values:</u></p> <p>V1. Demonstrate integrity, professional and academic ethics, participation in finding constructive solutions to some societal issues, and a commitment to responsible citizenship.</p> <p>V2. Self-evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently.</p> <p>V3. Lead teamwork with functional flexibility and effectiveness, and take responsibility for professional development, participating in developing the group's performance, and enhancing the quality of life.</p> <p>-After completing their Diploma of Science in Physics from Imam Mohammed Ibn Saud Islamic University, students will have the following opportunities:</p>		
<b>N.</b>	<b>Occupation name</b>	<b>Occupation code</b>
1	Medical Laboratory Technician	321201
2	Medical statistical Technician	331406
3	Meteorological Technician	311102
4	Geophysicist	211402

## B. Mission, Goals, and Learning Outcomes

### 1. Program Mission:

Providing high-quality education in physics that enables graduates to meet the needs of the labor market and qualify them to pursue scientific research and contribute to the service and development of community.

### 2. Program Goals:

The Physics program is designed to achieve the following goals:

- Producing graduates who are well grounded in the fundamentals of Physics and acquisition of the necessary skills, in order to use their knowledge in Physics in a wide range of practical application.
- Developing creative thinking and the power of imagination to enable graduates work in research in academia and industry.
- Accommodating their relevant fields in allied disciplines and to allow the graduates of Physics to fit into the inter-disciplinary environment.
- Relating the training of Physics graduates to the employment opportunities, which contributes to economic and social development.

### 3. Relationship between Program Mission and Goals and the Mission and Goals of the Institution/College.

- The Physics department has a clear and published mission statement that is appropriate for higher education and consonant with the mission and strategic priorities of the university and college.
- The program contributes to implementing the mission of the university by the formation of well qualified graduates in physics.

### 4. Graduate Attributes:

Upon completion of the Physics degree, students should have acquired the following knowledge and skills:

- A thorough quantitative and conceptual understanding of the core areas of Physics, including mechanics, electricity and magnetism, thermodynamics, statistical Physics, and quantum mechanics, at a level compatible with admission to graduate programs in Physics at peer institutions.
- The basic laws of Physics, their corollaries, and comprehension of how they can be applied to explain specific natural phenomena.
- The use of critical thinking, hypothesis building, and application of the scientific method to Physics concepts, theoretical models, and laboratory experiments.
- Problem solving skills and mathematical methods to approach, conceptualize, and achieve analytical or numerical solutions to Physics problems.
- Laboratory skills and exposure to a variety of experiments illustrating important phenomena, measuring techniques, and quantitative analysis of data and uncertainty at appropriate levels.
- The development of Physics.
- Contemporary areas of Physics inquiry.
- Written and oral communication skills for presentation of scientific results.

<b>5. Program learning Outcomes*</b>	
<b>Knowledge and Understanding</b>	
K1	Recognize a broad set of knowledge concerning the fundamental principles and concepts of physics.
K2	Outline a knowledge and specialized understanding of processes, tools, methods, and practices based on recent developments in physics.
<b>Skills</b>	
S1	Apply the concepts, principles and theories involved in addressing issues and problems in a range of different contexts.
S2	Critically evaluate knowledge and use it to provide innovative solutions to contemporary issues and problems in physics.
S3	Practice statistical methods and analysis in investigating different issues and case study research.
S4	Communicate in different ways demonstrating an understanding of theoretical knowledge, transferring knowledge and specialized skills, and sharing ideas within a variety of audience.
S5	Choose and use a variety of digital technology, information, communication technology tools, to process, analyze and produce data and information; to support and promote specialized research and projects.
<b>Values</b>	
V1	Demonstrate integrity, professional and academic ethics, participation in finding constructive solutions to some societal issues, and a commitment to responsible citizenship.
V2	Self-evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently.
V3	Lead teamwork with functional flexibility and effectiveness, and take responsibility for professional development, participating in developing the group's performance, and enhancing the quality of life.

\* Add a table for each track and exit Point (if any)

## C. Curriculum

### 1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	1	2	1.15 %
	Elective	9	18	10.34%
College Requirements	Required	5	21	12.07%
	Elective	0	0	0%
Program Requirements	Required	33	123	70.69%
	Elective	0	0	0%
Capstone Course/Project	Required	1	4	2.30 %
Field Experience/ Internship				
Others	Elective	3	6	3.45%
<b>Total</b>		<b>52</b>	<b>174</b>	<b>100%</b>

\* Add a table for each track (if any)

## 2. Program Study Plan

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 1	PHY 1101	General Physics	Required		5	Physics
	MAT 1101	Calculus (1)	Required		5	Mathematics
	ENG 1140	English (1)	Required		3	College of Languages and Translation
		University Requirement 1	Elective		2	University Requirement
Level 2	PHY 1105	Classical Mechanics (1)	Required	PHY 1101 MAT 1101	5	Physics
	MAT 1102	Calculus (2)	Required	MAT 1101	5	Mathematics
	ENG 1195	English (2)	Required		3	College of Languages and Translation
		University Requirement 2	Elective		2	University Requirement
Level 3	PHY 1121	Electricity and Magnetism	Required	PHY 1101 MAT 1102	5	Physics
	CHM 1101	General Chemistry (1)	Required		5	Chemistry
	STA 1111	Intr. to Probability and Statistics	Required	MAT 1102	4	Mathematics
Level 4	PHY 1240	Wave & Optics	Required	PHY 1105 MAT 1102	5	Physics
	MAT 1203	Calculus (3)	Required	MAT 1102	5	Mathematics
	PHY 1281	Electromagnetism Laboratory	Required	MAT 1101	2	Mathematics
		University Requirement 3	Elective		2	University Requirement
Level 5	PHY 1230	Thermal Physics	Required	PHY 1101 MAT 1203	5	Physics
	PHY 1233	Mathematical Physics (1)	Required	MAT 1203	4	Physics
	PHY 1282	Wave & Optics Laboratory	Required	PHY 1240	2	Physics
	MAT 1221	Intr. Linear Algebra	Required	MAT 1101	4	Mathematics
Level 6	PHY 1250	Modern Physics	Required	PHY 1240	4	Physics
	PHY 1203	Classical Mechanics (2)	Required	PHY 1105 MAT 1103	4	Physics
	PHY 1283	Thermal Physics & Mechanics Laboratory	Required	PHY 1230	2	Physics
		University Requirement 4	Elective		2	University Requirement
	QUR 1001	Quran (University Requirement 5)	Required		2	University Requirement
Level 7	PHY 1334	Mathematical Physics (2)	Required	PHY 1233	4	Physics
	PHY 1312	Quantum Mechanics (1)	Required	PHY 1250 STA 1111	4	Physics
	PHY 1321	Electromagnetic Fields	Required	PHY 1102 MAT 1203	5	Physics
		University Requirement 6	Elective		2	University Requirement
Level 8	PHY 1324	Electronics	Required	PHY 1121 PHY 1233	4	Physics
	PHY 1313	Quantum Mechanics (2)	Required	PHY 1312	4	Physics
	PHY 1332	Statistical Physics	Required	PHY 1312 PHY 1230	4	Physics
	MAT 1241	Math Software	Required	MAT 1102	3	Mathematics
Level 9	CS 1249	Computer Programming for Science	Required	MAT 1241	4	College of Computer Science
	PHY 1362	Atomic Physics	Required	PHY 1313	4	Physics
	PHY 1382	Electronic Laboratory	Required	PHY 1324	2	Physics
		University Requirement 7	Elective		2	University Requirement
		Free Course *	Selected			
	PHY 1464	Nuclear Physics	Required	PHY 1312	4	Physics
	PHY 1461	Solid state Physics	Required	PHY 1313	5	Physics

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 10	PHY 1404	Fluid Mechanics	Required	PHY 1203 PHY 1334	4	Physics
		Free Course *	Selected			
Level 11	PHY 1436	Computational Physics	Required	CS 1249 PHY 1334	4	Physics
	PHY 1481	Solid state Physics & Modern Laboratory	Required	PHY 1461	2	Physics
	PHY 1471	Special Topics in Applied Physics (1)	Required		3	Physics
	PHY 1472	Special Topics in Applied Physics (2)	Required		3	Physics
		University Requirement 8	Elective		2	University Requirement
Level 12	PHY 1496	Training	Required		4	Physics
	PHY 1498	Final Year Project	Required	PHY 1461	4	Physics
		University Requirement 9	Elective		2	University Requirement
		University Requirement 10	Elective		2	University Requirement
		Free Course *	Selected			

\* Include additional levels if needed

\*\* Add a table for each track (if any)

### 3. Course Specifications

Insert hyperlink for all course specifications using NCAAAA template

[https://drive.google.com/drive/folders/1c3LJ2AmDPrJUzGbicqASs7YNMRC3AxS8?usp=share\\_link](https://drive.google.com/drive/folders/1c3LJ2AmDPrJUzGbicqASs7YNMRC3AxS8?usp=share_link)

### 4. Program learning Outcomes Mapping Matrix

Align the program learning outcomes with program courses, according to the following desired levels of performance (I = Introduced P = Practiced M = Mastered )

Course code & No.	Program Learning Outcomes									
	Knowledge and understanding		Skills					Values		
	K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
PHY 1101	I	I	I	I	I	I	I	I	I	
MAT 1101	I	I	I	I	I	I	I	I	I	
ENG 1140								I	I	
University Requirement 1								I	I	
PHY 1105	I	I	I	I	I	I	I	I	I	
MAT 1102	I	I	I	I	I	I	I	I	I	
ENG 1195								I	I	
University Requirement 2								I	I	
PHY 1121	I	I	I	I	I	I	I	I	I	
CHM 1101	I	I	I	I	I	I	I	I	I	
STA 1111	I	I	I	I	I	I	I	I	I	
PHY 1240	I	I	I	I	I	I	I	I	I	
PHY 1281	I	I	I	I	I	I	I	I	I	
MAT 1203	I	I	I	I	I	I	I	I	I	
University Requirement 3								I	I	
PHY 1230	I	I	I	I	I	I	I	I	I	



Course code & No.	Program Learning Outcomes									
	Knowledge and understanding		Skills					Values		
	K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
PHY 1233	P	P	P	P	P	P	P	P	P	P
PHY 1282	I	I	I	I	I	I	I	I	I	I
MAT 1221	I	I	I	I	I	I	I	I	I	
PHY 1250	I	I	I	I	I	I	I	I	I	
PHY 1203	P	P	P	P	P	P	P	P	P	
PHY 1283	I	I	I	I	I	I	I	I	I	I
University Requirement 4									I	I
University Requirement 5									I	I
PHY 1334	P	P	P	P	P	P	P	P	P	
PHY 1312	P	P	P	P	P	P	P	P	P	
PHY 1321	P	P	P	P	P	P	P	P	P	
University Requirement 6									I	I
PHY 1324	P	P	P	P	P	P	P	P	P	
PHY 1313	P	P	P	P	P	P	P	P	P	
PHY 1332	P	P	P	P	P	P	P	P	P	P
MAT 1241		I	I		I	I	I	I	I	
CS 1249	P	P	P	P	P	P	P	P	P	
PHY 1382	P	P	P	P	P	P	P	P	P	P
PHY 1362	M	M	M	M	M	M	M	M	M	
University Requirement 7									I	I
Free Course									I	I
PHY 1464	M	M	M	M	M	M	M	M	M	
PHY 1461	M	M	M	M	M	M	M	M	M	
PHY 1404	M	M	M	M	M	M	M	M	M	
Free Course									I	I
PHY 1436	M	M	M	M	M	M	M	M	M	
PHY 1481	M	M	M	M	M	M	M	M	M	M
PHY 1471	M	M	M	M	M	M	M	M	M	M
University Requirement 8									I	I
PHY 1472	M	M	M	M	M	M	M	M	M	M
PHY 1498	M	M	M	M	M	M	M	M	M	M
University Requirement 9									I	I
University Requirement 10									I	I
Training									I	I
Free Course									I	I

\* Add a table for each track (if any)

## 5. Teaching and learning strategies to achieve program learning outcomes

Describe policies, teaching and learning strategies, learning experience, and learning activities, including curricular and extra-curricular activities, to achieve the program learning outcomes.

The department ensures teaching quality standards through the following actions:

- At the beginning of each semester the syllabi, are given to the students, containing courses detailed information, method of evaluation and grades, etc.
- The courses distribution is done according to the specialties of faculty staff and their wishes.
- At the beginning of each semester two coordinators are nominated for each course, one in Female Branch and the other in Male Branch one, who are asked to communicate and coordinate between them.
- The duties of the course coordinator consist on:
  - Distribution of time according to the course contents.
  - The preparation of the exercises lists, the midterms and the final exam.
- The follow-up of good progress of the course in all the sections through the periodic meetings with course teachers and report.
- The evaluation of the teaching quality and benchmarking between parallel sections (groups) and the sections of the previous session of the same course.
- Collect the course report.
- Update the course folder.
- Annual report is prepared annually.
- Student surveys of all courses and program.
- Teaching staff evaluations of the program.
- Annual Faculty and Staff performance evaluation.

### *Supports for student independent work:*

There are many supports for the independent scientific work of the students and here are some of them:

- 1) *Open Computer Labs*: The students can use these facilities to review independently a part of a course, to prepare a home work or an exam, or to access the (local) digital library;
- 2) *Provided free textbooks*: The students can use textbooks to prepare independently exercises for the tutorial or to review examples of the course;
- 3) *Digital library via open computer labs*: The students can access the (local) digital library to get free papers and theses. They read independently these resources and write reports on them;
- 4) *Materials provided via Blackboard platform*: The teachers use Blackboard platform to give students all kinds of materials related to the courses: syllabi, slides, list of exercises, solutions to exams and home works, etc... These materials can be used independently by students for a best management of the course;
- 5) *At least six office hours provided by each teacher*: Each teacher has to choose in his timetable at least six office hours in order to discuss all course issues with students;
- 6) *Research or graduation project course*. During this course, students have to work independently in order to write a report and to give an oral presentation at the end of the course;

7) Mini-projects and/or home works in some courses: The main goal of these assessment methods is to strength the independence work of students.

#### **6. Assessment Methods for program learning outcomes.**

Describe assessment methods (Direct and Indirect) that can be used to measure achievement of program learning outcomes in every domain of learning.

##### **Direct Assessment Methods:**

- National or regional exam results.
- Capstone Project or Course.
- Entrance/Exit Interviews/exams.
- Performance (participation in campus and/or community events, volunteer work, presentations, internships, art performances, etc).
- Course e-Portfolio.

##### **Indirect Assessment Methods:**

- Alumni Survey.
- Course Evaluation Survey.
- Employer/industry Survey.
- Program Advisory Committee minutes.
- Teaching staff surveys on the program.
- Observations (Information can be collected while observing “events” such as classes, social gatherings, activities, group work, study sessions, etc. Observation can provide information on student behaviors and attitudes).
- Syllabus Review.
- Second Examiner checklist (to improve it so that to include: course learning outcomes).
- Course report.
- External assessor report.
- Accreditation review.

## **D. Student Admission and Support:**

### **1. Student Admission Requirements**

The admission of students at University is part of the responsibility of the Deanship of Admission and Registration. The students admitted in the program are part of the students already passed successfully the Preparatory Year Program (PYP) Applied Science Track according their grades and wishes.

All newly admitted students are required to complete the PYP before starting their undergraduate study (Applied Sciences path). Students may be exempted from part or all of this program according the related executive principles.

1. Applicant must be holding a General Secondary Certificate or Secondary Certificate or equivalent from outside Kingdom of Saudi Arabia.
2. Applicant must not be terminated from any other university for discipline rules.
3. Applicant must be medically fit.
4. Applicant must have an official approval from his manager or supervisor, both in private or governmental sectors.

5. Admission to scientific colleges including the college of science is confining to secondary school students – Scientific Section after they passing the preparatory year exams.
6. The equivalent ratio that enables students to be accepted in Applied Sciences path is 80%.

Criteria of admission onto the College programs and preparatory majors are handling as follows:

<i>Academic Major of Preparatory Path</i>	<i>Qualifying Disciplines</i>	<i>Weights of GPA by National Center for Assessment (<a href="http://www.qiyas.org">www.qiyas.org</a>)</i>	<i>College</i>	<i>Program</i>
Applied Sciences Path	Scientific	Secondary (40%) Formative (40%) Summative (20%)	Science	Physics
				Applied Mathematics
				Chemistry
				Biology

According to his\her GPA, the student will be accepted directly into the scientific program he / she wishes to enrol in after passing the preparatory program successfully.

The admissions take place only once on summer vacation, through the Unified E-Admission Portal at the public universities in Riyadh region. There are no admissions for the second semester. The application for admission is through the Unified E-admissions Portal for Students.

Students can apply for admission to IMSIU University through the Unified E-Admissions Portal for public universities in Riyadh region. In fact, It enables the applicant to fill the admission application electronically and to choose an academic major according to his/her certifications, grades and priorities determined by himself/herself without the need of his/her presence at the university.

## **2. Guidance and Orientation Programs for New Students**

Students have to be prepared at the general education level through the Preparatory Year Program in the following disciplines: English Language, Mathematics, Sciences, and Computer skills.

## **3. Student Counseling Services**

(academic, career, psychological and social )

- Student admitted to the bachelor program will be assigned an academic advisor, responsible for pastoral support, guidance and counseling.
- The lecturer for each course allocates 6 office hours per week advertised on his /her own timetable, and reserved as part of his/her teaching schedule to help the students on any academic problems/difficulties.
- Student is able to get individual consultation and academic advice appointment with teaching staff via e-mail or phone calls.
- A list of teaching staff members with their room numbers, their phone numbers and their e-mail addresses is given in the Bachelor's Physics Handbook and Department website.
- University support services include careers, financial advice, housing, counseling etc.
- Excellent library facilities.
- University, college and department handbooks provide information about the course structure and University regulations etc.

- Feedback is provided for all assessments.

#### 4. Special Support

(low achievers, disabled, gifted and talented)

Students with physical disabilities are welcomed in the program. If they wish to receive special accommodations while enrolled, they should contact the Counseling and Advising Unit at the College.

### E. Teaching and Administrative Staff

#### 1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills ( if any )	Required Numbers		
	General	Specific		M	F	T
Professors	Physics			10	5	15
Associate Professors	Physics			8	4	12
Assistant Professors	Physics			10	10	20
Lecturers	Physics			2	2	4
Teaching Assistants	Physics			4	4	8
Technicians and Laboratory Assistants	Physics					
Administrative and Supportive Staff				1	1	2
Others ( specify )						

#### 2. Professional Development

##### 2.1 Orientation of New Teaching Staff

Describe briefly the process used for orientation of new, visiting and part-time teaching staff

One of the main tasks of the manager of the program are:

- Equipping new faculty members with the knowledge and skills that they will need in their first semester in order to progress toward types of objectives, targeted skills, assessment methods, nature of research, role of funding and graduate students, etc...
- Explaining to the new, visiting or part time teaching staff how to design, and deliver a course and assess the learning outcomes.
- Explaining to the new, visiting or part time teaching staff the nature of the university environment and constraints.

##### 2.2 Professional Development for Teaching Staff

Describe briefly the plan and arrangements for academic and professional development of teaching staff (e.g., teaching & learning strategies, learning outcomes assessment, professional development, etc.)

- Teaching staff are encouraged to attend trainings and workshops for improving their teaching and student assessment skills.

- Teaching staff members are encouraged to reflect on their teaching and research, in order to develop innovative teaching methods and knowledge of research.
- Indeed, each year University awards are presented to academic staff for outstanding contributions to teaching, research supervision and publishing.

## F. Learning Resources, Facilities, and Equipment

### 1. Learning Resources.

Mechanism for providing and quality assurance of learning resources (textbooks, references and other resource materials, including electronic and web-based resources, etc.)

For the planning and acquisition of learning resources the department proceeds as follows:

STEP 1: For each course the department assigned a faculty members committee to do the followings:

- Course description (preliminary syllabus),
- Recommend Lists of Required Textbooks, Essential References Materials (Journals, Reports, *etc.*), Recommended Textbooks and Reference Material (Journals, Reports, *etc.*), Electronic Materials (eg. Web Sites, Social Media, Blackboard, *etc.*), and other learning material such as computer-based programs/CD, professional standards or regulations and software.

STEP 2: A committee collects learning resources of all courses and submits the required lists to the Head of the department to get the approbation of the department council.

STEP 3: After the department council approbation the Department Head asks the College Dean to provide the Required lists of Learning Resources through the University Central Library and/or the IT Deanship.

### 2. Facilities and Equipment

(Library, laboratories, medical facilities, classrooms, etc.).

For the planning and acquisition resources for library, laboratories, and classrooms the department proceeds as follows:

STEP 1: Evaluation of the locals assigned for graduated programs: Library (equipped with textbooks and references provided by the Central Library), Laboratories, and classrooms.

STEP 2: In the shortage case of supplies the a committee will report that to the Department Head in order to ask the College Dean to provide such supplies through the University Central Library and/or the IT Deanship.

### 3. Arrangements to Maintain a Healthy and Safe Environment (According to the nature of the program )

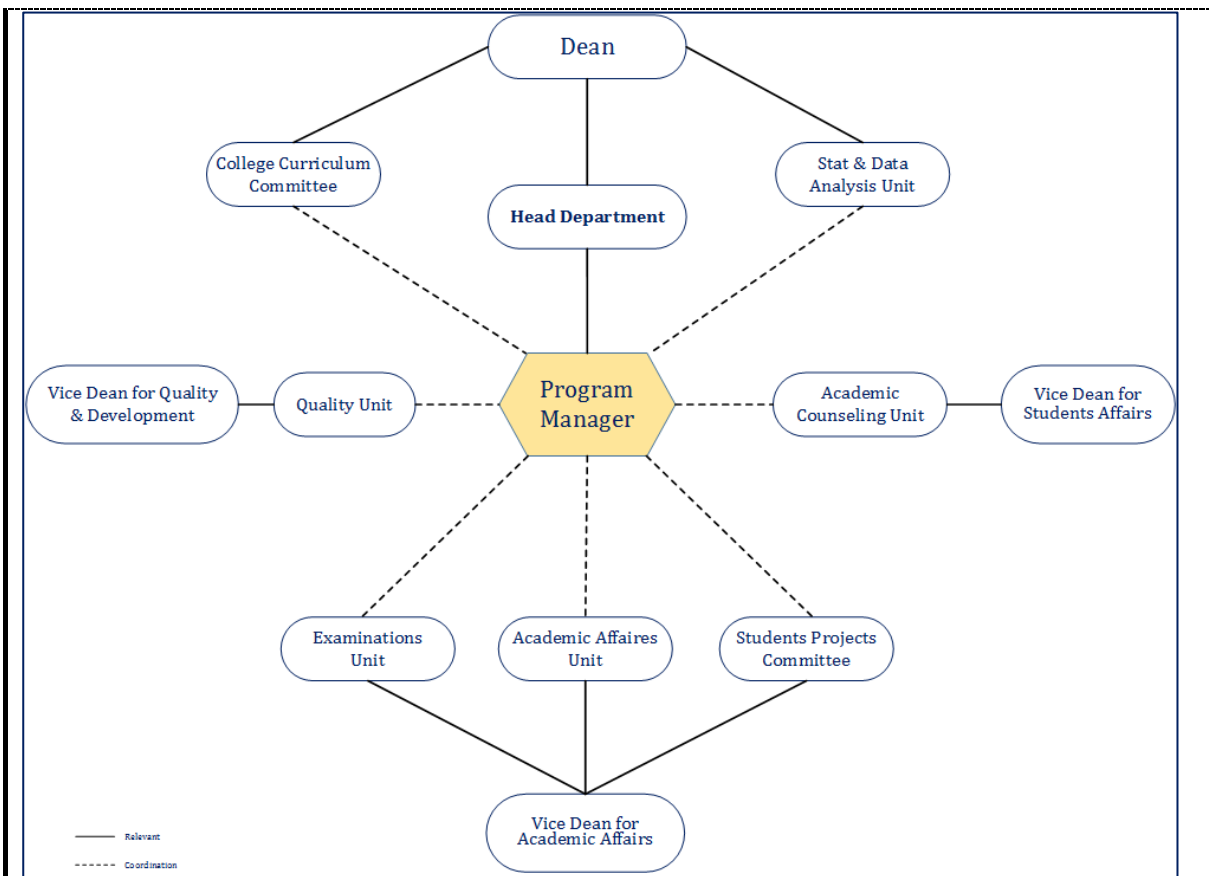
Laboratories are equipped with first aid and ventilation.

## G. Program Management and Regulations

### 1. Program Management

#### 1.1 Program Structure

(including boards, councils, units, committees, etc.)



**Figure 1 - Program administrative flowchart**

## 1.2 Stakeholders Involvement

Describe the representation and involvement of stakeholders in the program planning and development. (students, professional bodies, scientific societies, alumni, employers, etc.)

- The department of Physics has an Advisory Board who helps it to improve and develop the program. In this Advisory Board, there are representatives of faculty, employers, graduates and current students.
- Questionnaire of the graduated student employers of the program.

## 2. Program Regulations

Provide a list of related program regulations, including their link to online version: admission, study and exams, recruitment, appeals and complaint regulations, etc.)

[AT\\_1 and AT\\_2](#)

## H. Program Quality Assurance

### 1. Program Quality Assurance System

Provide online link to quality assurance manual

[First Link](#)

[Second Link](#)

Program review and its development is periodically assessed through the following processes:

- Courses reports are submitted to the program manager every semester.
- Appropriate teaching staff committee is in the charge of assessment and modification.
- Prepare and monitor the annual program report.
- Conduct and analyze surveys opinion of the students about the courses and the program.
- Conduct and analyze surveys opinion of the employers about the program.
- Program manager reviews the proposals submitted by the previous committees and makes appropriate decision after approbation of the department council.





1. The department studies course specifications and evaluates their compatibility to make sure that these courses meet the students' needs in the program.
2. The department of Physics communicates its needs to other departments to ensure that the courses coverage fulfill the needs of students in Bachelor of Sciences in Physics program.
3. The syllabi of the courses taught by other departments are periodically reviewed by the department in collaboration with the concerned departments' to ensure compliance to the program's requirements.
4. Explore the professional requirements for the program through employers' surveys.

**4. Arrangements Used to Ensure the Consistency between Main Campus and Branches**  
(including male and female sections)

- Teaching the same program.
- The department chooses a coordinator for each course and for each branch at the beginning of the semester.
- The coordinators of branches insure that solved exercises are the same all branches.
- The final exam is common for all branches.

**5. Arrangements to Apply the Institutional Regulations Governing the Educational and Research Partnerships** (if any).

N.A.

**6. Assessment Plan for Program Learning Outcomes (PLOs), and Mechanisms of Using its Results in the Development Processes**

1. Program Goals.
2. Program Learning Outcomes (PLOs).
3. Program Goals and PLOs.
4. Brief Description of PLOs Assessment:
  - The learning outcomes of the Physics program have been formulated according to the national qualifications framework (NQF) and are recorded in the program specification. Moreover, each course has its own learning outcomes that are recorded in the course specification and related to the learning outcomes of the program.
  - The learning outcomes are mentioned in the courses and program specifications which are available for students and beneficiaries via the following web site: <https://units.imamu.edu.sa/colleges/en/science/Admission/Pages/default.aspx>
  - Mechanism for the measure of the learning outcomes and improvement plans:
    - Course folder:
      - Through the study of the learning outcomes matrix which is stated in the program specification. A model has been selected from the courses learning outcomes which are greatly serving the program plan.
      - The exams models and learning outcomes have been reviewed for those courses existing in the course and program specification.
      - There exists a difference in the results of the students, where 80% of the learning outcomes has been covered taking into account that the exams is unified between male and female sections.
      - Advisory committee report:
        - The remarks and comments from the committee were considered and discussed in the Department council (the minute of the committee and Department).

- Annual Report:
- The learning outcomes were measured through the main KPIs that were approved from the college council. Annually, the results are documented with the improvement plans within the annual report and taking into consideration the available feedback through the following items:
  - Course report.
  - Student's feedbacks.
  - Students' questionnaire.
  - Employers' feedbacks.
  - External assessor for the program and the exams.
  - The minutes of the advisory committee.
- Besides, all of these points were discussed in the Department councils and improvements plans were suggested and applied.
- External Assessor:  
All remarks and comments were replied and a report were sent to the head of the Department and discussed in the department council (report of the external assessor, department council minutes and the replies).
- Evidences:
  - Courses reports.
  - Feedbacks from the courses reports.
  - External assessor reports for the program and exams.
  - The advisory committee minutes.
  - Department council minutes (Laboratories improvement mechanism).
  - Department council minutes (discussion of the annual report).
  - Department council minutes (external assessor).
  - Department council minutes (final year projects).
  - The external assessor report.
  - The reply on the external assessor report.
  - The analysis of the student questionnaires about the courses.
- Annual report.
- The summary of the program annual report.
- The results of the student's questionnaires.
- The results of the graduate's questionnaires.
- The results of the employer's questionnaires.

5. PLOs Assessment Results.

6. Recommendation for Improvement (from the Annual Program Report).

### 7. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Leadership	Dean	Evaluation report	End of academic year
Effectiveness of teaching & assessment	Program leader, faculty, independent reviewers, students	Surveys, interviews, visits	End of the semester, during the semester
Learning resources	Employers, faculty, graduates, students	Surveys, interviews	end of the semester, during the semester

**Evaluation Areas/Aspects** (e.g., leadership, effectiveness of teaching & assessment, learning resources, partnerships, etc.)

**Evaluation Sources** (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others (specify))

**Evaluation Methods** (e.g., Surveys, interviews, visits, etc.)

**Evaluation Time** (e.g., beginning of semesters, end of academic year, etc.)

### 8. Program KPIs\*

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
1	KPI- 1	Percentage of performance indicators of the operational plan objectives of the program that achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year	96%	Annual report-Accreditation review	2022
2	KPI- 2	Average of overall rating of final year students for the quality of learning experience in the program on a five point scale in an annual survey.	4.5	Course e-portfolio-Statistical survey	2022
3	KPI- 3	Average students overall rating for the quality of courses on a five-point scale in an annual survey	4.5	Course e-portfolio-Statistical survey	2022
4	KPI- 4	Proportion of undergraduate students who completed the program in minimum time in each cohort.	40%	Course e-portfolio-Statistical survey	2022
5	KPI- 5	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year	30%	Course e-portfolio-Statistical survey	2022
6	KPI- 6	Percentage of students or graduates who were successful in the professional and / or national examinations, or their score average and median (if any)	40%	National exam results survey	2022
7	KPI- 7	Percentage of graduates from the program who within a year of graduation were: a. employed, b. enrolled in postgraduate programs during the first year of their graduation to the total number of graduates in the same year	75%-15%	Alumni survey	2022
8	KPI- 8	Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory.)	25	Course e-portfolio-performance survey	2022
9	KPI- 9	Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey	4	Employer-industry survey	2022

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
10	KPI- 10	Average of students' satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, academic advising, ...) on a five-point scale in an annual survey	3	Questionnaire-Evaluation survey form	2022
11	KPI- 11	Ratio of the total number of students to the total number of full-time and fulltime equivalent teaching staff in the program	14:1	Statistical survey	2022
12	KPI- 12	Percentage of teaching staff distribution based on: a. Gender, b. Branches c. Academic Ranking	80%	Statistical survey	2022
13	KPI- 13	Proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff	0	Statistical survey	2022
14	KPI- 14	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program	80%	Statistical survey	2022
15	KPI- 15	The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year	2-1	Teaching staff survey- Statistical survey	2022
16	KPI- 16	The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total )research published	125	Teaching staff survey- Statistical survey	2022
17	KPI- 17	Average of beneficiaries' satisfaction rate with the adequacy and diversity of learning resources (references, journals, databases... etc.) on a five-point scale in an annual survey	4	Teaching staff survey- Statistical survey	2020-8-29

\* including KPIs required by NCAAA

## I. Specification Approval Data

<b>Council / Committee</b>	<b>Quality Unit-Physics Department</b>
<b>Reference No.</b>	<b>Department Council No. 23</b>
<b>Date</b>	<b>1443/08/07</b>