Program Specification

(Postgraduate Programs)

Program Name:	Medical Physics
Program Code (per the Saudi Standard Classification of Educational Levels and Specializations):	05330801
Qualification Level:	7 level
Department:	Physics
College:	Science
Institution:	University of Tabuk
Program Specification:	New ☐ updated* ■
Last Review Date:	write here

*Attach the previous version of the Program Specification.

Table of Contents

A. Program Identification and General Information:

1. Program's Main Location:

University of Tabuk, Faculty of Science, Main Campus

2. Branches Offering the Program (if any):

None

3. System of Study:

■ Coursework & Thesis	☐ Coursework

4. Mode of Study:

■ On Campus	☐ Distance Education	☐ Other ……(specify)

5. Partnerships with other parties (if any) and the nature of each:

None

6. Professions/jobs for which students are qualified:

Government Sector
Medical Physicist 211104
Medical laboratory specialist 213115
Medical Quality Assurance Specialist 226903
Medical Equipment Technician 311408
Medical Laboratory Technician 321201
Private Sector
Dosimetry (standard laboratories)
Radiation protection agencies
Nuclear medicine technologist
Academic Researcher
Teaching Assistant

7. Relevant occupational/ Professional sectors:

Education, Research sectors, professional technicians in hospitals, laboratories, the medical and nuclear technology industries.

8. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. Master in Medical Physics	42	as listed in 6

9. Exit Points/Awarded Degree (if any):

Exit points/Awarded degree	Credit hours
None	

10. Total credit hours: (42)

B. Mission, Goals, and Program Learning Outcomes

1. Program Mission:	
Prepare qualified scientific professionals with advanced medical knowledge and skills within an academic environment that fosters medical research and contributes to community service.	
2. Program Goals:	
1- To prepare highly qualified medical physics professionals with exceptional knowledge, skills, and effective communication abilities, both orally and in writing, using appropriate techniques in their work environment 2- To encourage distinguished scientific research, capabilities of critical thinking and participation in research programs in medical physics. 3- To actively engage in community service, uphold social responsibility, adhere to professional ethics, and honor religious values. 4- To foster an academic environment that supports and fulfills the expectations of beneficiaries.	
3. Program Learning Outcomes:*	
Knowledge and Understanding:	
K1	Identify the core concepts in theoretical medical physics and recent developments in imaging techniques, and radiation therapy principles.
K2	Recognize the medical imaging modalities and their applications in clinical practice, and specialized research and/or imaging techniques in a medical physics application,
Skills:	
S1	Apply specialized theories, principles, and concepts related to advanced technologies in medical equipment, and medical physics.
S2	Use advanced and specialized processes in medical physics instrumentations, including dosimeters and radiation therapy planning systems to deal with advanced practical medical activities.
S3	Select an advanced practical task on calibrations of medical imaging and treatment devices to ensure compliance with safety standards and regulations.
S4	Evaluate advanced or professional core concepts, theories, and inquiry methodologies in experimental medical physics to provide creative solutions.
S5	Investigate issues related to digital technology to process and analyze the data to support advanced projects in medical physics research.
S6	Communicate complex medical physics concepts clearly and effectively to diverse audiences, and stakeholders, ensuring the understanding and collaboration.
Values, Autonomy, and Responsibility:	

V1	Demonstrate integrity and professional and academic values when dealing with medical various issues, including patient safety, informed consent, and environmental considerations.
V2	Initiate professionally to effectively manage medical physics tasks, foster interdisciplinary collaboration and communication with healthcare professionals, and engage in community development.

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

C. Curriculum:

1. Curriculum Structure:

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Course	Required	6	18	43%
	Elective	4	12	29%
Graduation Project (if any)				
Thesis (if any)		1	6	14%
Field Experience(if any)		2	6	14%
Others (.....)				
Total		13	42	100%

* Add a separate table for each track (if any).

2. Program Courses:

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	MEPHY601	Human Anatomy and Physiology	Required		3	Program
	MEPHY602	Radiation Physics and Dosimetry	Required		3	Program
	MEPHY603	Radioisotopes and Nuclear Medicine	Required		3	Program
	MEPHY604	health Physics and Radiation Protection	Required		3	Program
Level 2	MEPHY605	Radiotherapy Physics	Required	MEPHY602	3	Program
	MEPHY606	Diagnostic Radiology	Required		3	Program
		Elective course 1 From Package 1	Elective		3	Program
		Elective course 2 From Package 1	Elective		3	Program
Level 3	MEPHY607	Clinical Training I	Required		3	Program
	MEPHY609	Medical Physics project	Required		3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
		Elective course 3 From Package 2	Elective		3	Program
Level 4	MEPHY608	Clinical Training II	Required		3	Program
	MEPHY609	Medical Physics project	Required		3	Program
		Elective course 4 From Package 2	Elective		3	Program
Elective	MEPHY610	Magnetic Resonance Imaging (MRI)	Elective Package 2	MEPHY606	3	Program
	MEPHY611	Ultrasound Physics and Diagnose	Elective Package 2		3	Program
	MEPHY612	Computational techniques and electronics in Medical Physics	Elective Package 2	MEPHY602	3	Program
	MEPHY613	Geant4 simulation program applications in medical physics	Elective Package 2	MEPHY602	3	Program
	MEPHY614	Special Topics in Medical Physics	Elective Package 2		3	Program
	MEPHY615	Special Topics	Elective Package 1		3	Program
	MEPHY616	Advanced Brachytherapy Physics	Elective Package 1	MEPHY605	3	Program
	MEPHY617	Quality Assurance and Quality Control	Elective Package 1	MEPHY602 & MEPHY603	3	Program
	MEPHY618	SEMINAR	Elective Package 2		3	Program

* Include additional levels (for three semesters option or if needed).
** Add a table for the courses of each track (if any)

3. Course Specifications:

Insert hyperlink for all course specifications using NCAAA template (T-104)

Course Specifications Link:
https://drive.google.com/drive/folders/15UiOuX01Om3kzMVweZfh4yvt_EgsNY6q?usp=drive_link

4. Program learning Outcomes Mapping Matrix:

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

Course code & No.	Program Learning Outcomes									
	Knowledge and understanding		Skills						Values, Autonomy, and Responsibility	
	K1	K2	S1	S2	S3	S4	S5	S6	V1	V2
MEPHY601	I		I	I	I	I			I	
MEPHY602	I	I	I	I	I	I			I	
MEPHY603		I		I	I	I		I		I
MEPHY604	I	I		I	I	I	I			I
MEPHY605	P		P	P		P		P	P	
MEPHY606	P	P	P	P		P	P		P	
MEPHY607	P	P	P	P	P	P	P	P	P	P
MEPHY608	M	M	M	M	M	M	M	M	M	M
MEPHY609	M	M	M	M	M	M	M	M	M	M
MEPHY615	M		M	M	M	M			M	
MEPHY616		M		M	M	M	M		M	
MEPHY617		M		M	M	M	M	M		M
MEPHY610	M			M	M		M		M	
MEPHY611	M			M	M		M	M		M
MEPHY612	M			M	M	M	M	M		M
MEPHY613	M			M	M	M	M	M		M
MEPHY614	M			M	M	M	M	M	M	
MEPHY618	M	M	M	M	M	M	M	M	M	M

* Add a separate table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes:

Describe teaching and learning strategies to achieve the program's learning outcomes in all areas.

Teaching faculty members must adhere to all the outlined teaching and assessment methodologies specified in the program and course specifications. The instruction and education prioritize the needs, capabilities, interests, and learning interests of the students. The curriculum design and course content have been developed to cope with this issue. The methods of teaching are:

- Lectures

- Group works
- Presentations
- Discussion
- Seminarsteaching
- Research

Depending on the nature of the learning objectives, each course requires unique teaching and learning strategies in addition to unique assessment techniques. Additionally, since the program's learning outcomes are the basis for the course's learning outcomes, teaching and learning strategies are modified based on the program's learning outcomes and the course's nature. According to the course specifications, the type of course and the necessary , learning, and assessment strategies are determined by the intended learning outcomes. The course reports contain documentation of the assessment of the instructional strategies and evaluation techniques.

6. Assessment Methods for program learning outcomes:

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

The program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least once in the program's cycle).

The following sentences show the Direct and Indirect assessment methods.

The direct Method of assessing the program learning outcomes:

The direct method is based on the students' course work. Every program learning outcome is assessed using capstone courses.

1. Amid-term exam.
2. Presentation.
3. Final exam.
4. Homework and assignments.
5. Final year research project.
6. Panel discussions

The Indirect Method of assessing the program learning outcomes:

The Medical Physics Program uses the stakeholders surveys to assess all the different aspects of the program including the program learning outcomes.

1. Questionnaires which may include

1. Employees' Satisfaction.
2. Student evaluation courses.
3. Community service.
4. Alumni Satisfaction
5. Faculty members.
6. Student experience.
7. Scientific supervision.
8. Program evaluation.
9. Student Academic Counselling.
10. Employers' Satisfaction**.**

2- External interviews.
4. Performance indicators.
5. Reference comparisons.
6. Independent evaluation.

All these surveys are conducted in the time frame that is specified for each one. The results of these surveys are used for implementation of improvement plans.

D. Thesis and Its Requirements (if any):

1. Registration of the thesis:

(Requirements/conditions and procedures for registration of the thesis as well as controls, responsibilities and procedures of scientific guidance)

- All second-year (level 3) students must complete the research project.
- At the start of each academic year for graduate students, the program releases the titles of the projects that are available.
- Students choose the subject based on what interests them.
- The right supervisor will be chosen based on the student's field of study after he submits his own research title.

2. Scientific Supervision:

(The regulations of the selection of the academic supervisor and their responsibilities, as well as the procedures/ mechanisms of the scientific supervision and follow-up)

- The head of the department assigns supervisors to the students.
- In order to discuss the challenges of continuing the research, students must attend the supervisor class, which takes place once a week and lasts three credit hours.
- The supervisor writes a follow-up report and submits it to the department head every month regarding the student's research progress.
- At the conclusion of the academic year, the supervisor and two reviewers participate in the graduation project discussions.

3. Thesis Defense/Examination:

(The regulations for selection of the defense/examination committee and the requirements to proceed for thesis defense, the procedures for defense and approval of the thesis, and criteria for evaluation of the thesis)

- Students are required to present their research committee project work.
- To discuss the student's research, two reviewers who are relevant to the topic are chosen.
- Students defene their work in front of the research supervisor and reviewers.
- The examiner will assign grades based on how well the students present their work overall.
- Three copies of the final thesis must be turned in to the university by the student. One each for the department, the university library, and the supervisor.

H. Student Admission and Support:

1. Student Admission Requirements:

Candidate’s admission to the masters program in medical physics will be purely on merit basis, taking into consideration the following points:

- The candidate should hold a bachelor degree in physics
- The candidate should have a minimum GPA of (3.75/5).
- The candidate may have to go through a personal interview (if required), depending on the number of applicants.
- The candidate should have at least (400 points for TOEFL) and (5.5 points on IELTS) OR equivalent
- Employed consent is needed to enroll for the program (if required).
- Students with Saudi and Non-Saudi citizenship can enroll for this program

2. Guidance and Orientation Programs for New Students:

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

The program provides orientation for new students in which they are informed about their new responsibilities, the pertinent codes of conduct and the expectations and regulations regarding their behavior.

All rules and policies that regulate grievance, complaints and disciplinary are implemented by UT and it is published online on its website.

Guidance and Orientation Programs for New Students

https://www.ut.edu.sa/ar/Deanship/student-affairs/Pages/default.aspx

3. Student Counseling Services:

(Academic, professional, psychological and social)

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level)

The Physics Department handbook gives details and all requirements of the program.

- List of academic guidance and office hours per week are declared on each faculty member's office.
- The program shares with its students any important information related to the academic process and educational process through various technical tools such as the blackboard system, and the use of official emails.
- University support services include careers, financial advice, housing, counseling etc.
- University, college, department handbooks provide information about the course structure and University regulations etc.
- In level 3 and 4, male and female supervisor academic counselors are allotted for the students from the concerned department to resolve the student's queries regarding to the research project.

All Counseling manuals are available in the following link:

https://drive.google.com/drive/folders/17v83rBsSfxeVHKz_Nc9F3N0-U5SKykFg?usp=sharing

4. Special Support:

(Low achievers, disabled, and talented students).

The university of Tabuk provides care and support for the low achievers and the disabled students. Also, the college's campus provides all the requirements of disabled students (elevators, car parking, and special paths).

The Physics department program pays due attention to students of special needs. Their special needs are taken into consideration for the access of the building and specially during the exams. As for the underachieving students, they are identified and provided with remedial programs to help them overcome the difficulties hindering their progress into the program. These students are distributed among the academic advisors at the department and are given due interest. They are met on aregular basis by their academic advisors. Cooperative learning or other forms of teamwork are an active method to meet the needs of low achievers.

They are asked for extra support in office hours. For the gifted and talented students, the university has established programs in order to identify and to develop the abilities of these students.

This is achieved through holding several extracurricular activities to attract and to encourage the talented students to develop their abilities and gifts. The Physics department participates the talented students in internal and external activities.

E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff:

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	Physics	Nuclear physics, condensed matter physics, laser and optics physics	None	3	2	5
Associate Professor	Physics	Nuclear physics, condensed matter physics, laser and optics physics	None	4	3	6
Assistant Professor	Physics	Nuclear physics, condensed matter physics, laser and optics physics	None	4	5	9
Technicians and Laboratory Assistants	Physics	Physics	None	6	5	12
Administrative and Supportive Staff	None	None	None	1	1	2
Others (specify)						

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources:

Learning resources required by the program (textbooks, references, e-learning resources, web-based resources, etc.)

The Department of Physics provides the students with the best possible and latest technological resources to go through this program. Major facilities provided will be as follows:

- Well equipped classrooms
- Fully developed library
- Access to e-resources
- Access to electronic materials
- Study material prepared by faculty members
- Fully functional study rooms.

2. Facilities and Equipment:

(Library, laboratories, classrooms, etc.)

- Central Library at the university of Tabuk
- Laboratories for teaching and research laboratories
- Classrooms for teaching
- WIFI everywhere at the University
- Access to Well-equipped research laboratories at the department of physics, other labs in the university, research and development medical facilities at hospitals or at the industry sector

3. Procedures to ensure a healthy and safe learning environment:

(According to the nature of the program)

- The health and safety of all faculty, staff, and students are among the university's top priorities, and it is dedicated to creating a safe and healthy campus environment.
- It is not permitted to smoke on university property or in any of the facilities.
- Safety and safety instructions are announced at the locations where students congregate;
- Emergency exit doors and fire prevention guidelines are posted everywhere, with enough signboards in every area.
- The college is built with adequate ventilation in mind.
- There are fire extinguishers and alarm bells available beside each one are notices and signs explaining how to use it.
- Quality Assurance Manual covers various aspects, including laboratory safety, equipment maintenance, emergency preparedness, and risk assessment.
  Here comes the Quality Assurance Manual Link
  https://drive.google.com/file/d/1FHVW3wEieEhFJg7gFGe-ZKmJhgIW4zL3/view?usp=sharing

G. Program Quality Assurance:

1. Program Quality Assurance System:

Provide a link to the quality assurance manual.

https://drive.google.com/drive/folders/1CghOb7XA8AcQPCxhRfttfbm0hkm-sD5f

2. Program Quality Monitoring Procedures:

- Monitoring of courses by the department follows the university of Tabuk and NCAAA guidance.
- **At the end of each semester**, the faculty members submit a course file and course reports on the NCAAA forms.
- The minimum requirements for annual course monitoring should include the following (summary, analysis of final marks with comments on grades, CLOs, course evaluation, action plan for improvement)
- The self-evaluation surveys used can be determined using the distribution surveys and evidence that can be used to compare the achievement of goals at different periods.
- The report completed is reviewed by the Deanship or Development and Quality.

3. Procedures to Monitor Quality of Courses Taught by other Departments:

Not applicable.

4. Procedures adopted to ensure consistency between the program's sections (male and female sections, if any).

The Master's program implements a strong and united study plan for students, at more than one sections of male and female students according to a unified operational plan as well as a unified study plan, and

faculty members who teach courses in both parts are fully involved in the available specifications as well as the planning, evaluation, and reporting processes.

- Course descriptions, teaching methods, and evaluation are similar between males and females sections.
- Libraries and Laboratories must be provided to both the male and female sections.
- Examination pattern and questions must be unique to both the sections by course coordinator.

The course coordinator is responsible of

- To ensure that the course meets the course specifications,
- Create a unified curriculum that will be distributed to students.
- Discusses with peers teaching and learning strategies and learning assessments.
- He discusses with his peers the suggestions and improvements made in the previous session's report.
- Preparing periodic and final exams in coordination with them at the same time to ensure fairness in the evaluation process between male and female students.
- Ensure that written examinations cover course learning outcomes.

An annual report on the overall program is created by a group that includes members from both the male and female sections at the end of the semester, that includes suggestions and improvement plans. Additionally, there is a single program learning outcomes evaluation method with two cycles of testing. A program learning outcomes assessment report is created based on the above plan.

5. Assessment Plan for Program Learning Outcomes (PLOs):

Both annual surveys and assessments of program learning outcomes will measure key performance indicators.

The department committees analyze deficiencies and implementing action plans accordingly. The full procedural guide:

PLOs	Assessments	
	First Part Assessment Cycle	Second Part Assessment Cycle (After implementing the improvement plan)
	First year	Second year
All PLOs	Direct methods + Indirect methods using: Program Learning Outcomes Assessment Survey (expected graduate students+ graduate students+ Alumni).	Direct methods + Indirect methods using: Program Learning Outcomes Assessment Survey (expected graduate students+ graduate students+ Alumni).

PLOs	Direct Assessment	Indirect Assessment	Target Benchmark	Responsibility	Time of assessment
Knowledge					

K1	Identify the core concepts in medical physics, and recent developments such as imaging techniques, and radiation therapy principles.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year
K2	Recognize the medical imaging modalities and their applications in clinical practice, and specialized research and/or inquiry techniques of in a medical physics applications,	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year
Skills						
S1	Apply specialized theories, principles, and concepts in advanced contexts in a medical equipment discipline, and medical physics.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year

S2	Use advanced and specialized processes, medical physics equipment, including dosimeters and radiation therapy planning systems to deal with advanced practical medical activities.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year
S3	Select an advanced practical tasks on calibrations of medical imaging and treatment devices to ensure compliance with safety standards and regulations.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year
S4	Evaluate advanced or professional core concepts, theories, and inquiry methodologies in medical physics to provide creative solutions.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year

S5	Investigate digital technological to process and analyze the data to support and advance projects in medical physics research.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year
S6	Communicate complex medical physics concepts clearly and effectively to diverse audiences, and stakeholders, ensuring understanding and collaboration.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year
Values						
V1	Demonstrate integrity and professional and academic values when dealing with medical various issues, including patient safety, informed consent, and environmental considerations.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year

V2	Initiate professionally to effectively manage medical physics tasks, foster interdisciplinary collaboration and communication with healthcare professionals, and engage in community development.	All Master Courses	Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	80 % of students score more than 80%	For Courses: Lecturers For the Research project: Supervisor + Evaluation team For the Surveys: Statistics and information unit	Direct: First and Second year 1443H Indirect: Every year

6. Program Evaluation Matrix:

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of teaching and assessment methods	HOD, faculty, students, alumni, employers	Exam results, CR and Interviewers, Peer review, PLOs assessment, APR, Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	End of each term, Annually, Mid of the program
Learning outcomes	HOD, faculty, students, alumni, employers	CR, CES, Program evaluation survey, Alumni Survey, Employer's survey, Program Learning Outcomes Assessment Survey, Student Experience Survey.	End of each term, Annually, Mid of the program
Effectiveness of leadership	HOD, Faculty members, Admin staff	Staff performance evaluation forms, HOD, Faculty members, evaluation surveys.	Annually

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Overall quality of the program	Students, graduates, Faculty members, HOD, Admin staff, Employers, Advisory committee, Independent reviewers	CR, APR, Operational plan report, KPIs report, PLOs report, Surveys report, Discussion	Annually
Partnerships	HOD, Faculty members, Students, Advisory committee	CR, APR, Operational plan, Stakeholders surveys	Annually

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.)
Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others.
Evaluation Methods (e.g., Surveys, interviews, visits, etc.)
Evaluation Time (e.g., beginning of semesters, end of the academic year, etc.)

7. Program KPIs:*

The period to achieve the target (2) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-PG-1	Students' Evaluation of Quality of learning experience in the program	4.5	Report	End of academic year
2	KPI-PG-2	Students' evaluation of the quality of the courses	4.5	Survey	End of academic year
3	KPI-PG-3	Students' evaluation of the quality of academic supervision	4.5	Survey	End of academic year
4	KPI-PG-4	Average time for students' graduation	2 Years	Survey	End of academic year
5	KPI-PG-5	Rate of students dropping out of the program	<5%	Report	End of academic year
6	KPI-PG-6	Employers' evaluation of the program graduates' competency	4.5	Report	End of academic year
7	KPI-PG-7	Students' satisfaction with services provided	4.75	Report	End of academic year
8	KPI-PG-8	Ratio of students to faculty members	(1:1)	Survey	End of academic year
9	KPI-PG-9	Percentage of publications of faculty members	65%	Survey	End of academic year
10	KPI-PG-10	Rate of published research per faculty member	7.5:1	Report	End of academic year
11	KPI-PG-11	Citations rate in refereed journals per faculty member	12:1	Report	End of academic year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
12	KPI-PG-12	Percentage of students' publication	50%	Report	End of academic year
13	KPI-PG-13	Number of patents, innovative products, and awards of excellence	0	Report	End of academic year

* including KPIs required by NCAAA

H. Specification Approval Data:

Council / Committee	Physics Department Council
Reference No.	COUNCIL (7) – SUBJECT (3)
Date	19\3\1446