Program Specification

Program Name: Radiological Sciences
Qualification Level : The 7th level
Department: Radiological Sciences
College: Applied Medical Sciences
Institution: Najran University

A. Program Identification and General Information

1. Program Main Location:

Main campus of Najran University

2. Branches Offering the Program:

None

3. Reasons for Establishing the Program:
(Economic, social, cultural, and technological reasons, and national needs and development, etc.)

1- Fill the gap in number of the national radiological technologists in Saudi Arabia.
2- Matching the rapid advance in the field of radiological and medical imaging technology.
3- Enhance the role of medical imaging technology in National community.
4- Enriching scientific research to serve the developments of the national politics.
5- Increase the awareness of safety and protection in health education.

4. Total Credit Hours for Completing the Program: (142)

5. Learning Hours: (6030)
The length of time that a learner takes to complete learning activities that lead to achievement of program learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times)

6. Professional Occupations/Jobs:

- Radiological Sciences Technologist
- Academics.
- Medical imaging application and sales specialist.
- Medical bioinformatics and quality assurance specialist.

7. Major Tracks/Pathways (if any)**: NA**

Major track/pathway	Credit hours (For each track)	Professional Occupations/Jobs (For each track)
1. No tracks/pathways		
2.		
3.		
4.		

8. Intermediate Exit Points/Awarded Degree (if any)**: NA**

Intermediate exit points/awarded degree	Credit hours
1. No intermediate exit for the Degree	
2.	
3.	

B. Mission, Goals, and Learning Outcomes

1. Program Mission:

Preparing distinguished technical specialists in the field of medical imaging and diagnostic radiology sciences and promoting the scientific research in a way that contributes to community service

2. Program Goals:

1. Preparing graduates equipped with the necessary skills to practice efficiently in the field of diagnostic medical imaging.
2. Promoting the role of scientific research, which contributes to building a knowledge society
3. Contribute effectively in the community service in the field of radiological sciences.
4. Providing a supportive and motivating academic environment to develop students' capabilities

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

The mission of the university states offering teaching and learning that address the needs of society and the labor market. The program mission agrees with the university missions in providing high standard education that is essential to graduate qualified radiologists to meet the community needs.

The program mission come to an agreement with the mission of the college in preparing distinguished national cadres in the disciplines of the applied medical professions as the mission of the program is to prepare competitive radiologists equipped with clinical experience and skills.

The program goals agree with university goals in graduating distinguished students with great efficiency and with the college goals in preparing scientifically qualified graduates who are capable of self-learning. The program goals focus on building the basic knowledge framework with clinical capability and on developing research skills and self-learning abilities.

4. Graduate Attributes:

1. Able to manage and operate the different medical imaging modalities effectively and accurately.
2. Perform the medical imaging procedures with high competence
3. Apply patient's safety rules with emphasis on patient care and radiation protection.
4. Exhibit an effective communication, problem-solving and critical thinking skills.
5. Display a broad understanding of social and ethical responsibilities.
6. Possess the basics knowledge of medical scientific research and keep pace with the latest devolvement and technology in the field of radiological sciences.
7. Able to initially evaluate the medical images of different modalities and differentiate between the normal and abnormal appearance.

5..Program learning Outcomes*

Knowledge :

K1	Explain the concepts of basic principles of medical sciences, physics and the associated applications.
K2	Describe the methods of different medical imaging procedures.
Skills	
S1	Practice basics and medical sciences applications and imaging procedures in medical laboratories with the optimal patient care and protection.
S2	Operate effectively and safely the different medical imaging modalities.
S3	Evaluate the medical images of different modalities and differentiate between the normal and abnormal appearance.
S4	Demonstrate basics management and research skills.
Competence	
C1	Manage the operation of different medical imaging modalities effectively and accurately.
C2	Acquire an interpretable high quality image utilizing different imaging modalities.
C3	Carry out the optimal imaging examinations dependant on the assessment of patient conditions and safety requirements with ethical and legal manners.
C4	Communicate effectively with patient, colleagues and other health professionals.
C5	Demonstrate teamwork and inter-professional collaboration

* 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	6	12	8.5%
	Elective	--	--	--
College Requirements	Required	-	-	-
	Elective	--	--	--
Program Requirements	Required	56	130	91.5%
	Elective	--	--	--
Capstone Course/Project		NA	NA	NA
Field Experience/ Internship		6 months internship	NA	NA
Others		None	None	None
Total		**62**	**142**	**100%**

* 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	140 – ENG-2	Reading	Required	-	2	Program
	141- ENG-2	Writing	Required	-	2	Program
	142- ENG-2	Listening & Speaking	Required	-	2	Program
	143- ENG-2	Vocabulary & Grammar	Required	-	2	Program
	140- MATH-3	Introduction to Mathematics	Required	-	2	Program
	140- SKL-2	Learning, Research & thinking skills	Required	-	2	Program
	140 - TECH-3	Computer Skills	Required	-	3	Program
Level 2	150 - ENG-2	General English	Required	-	3	Program
	151 - ENG-2	Technical writing Report	Required	-	2	Program
	150 - MAN-1	Ethics	Required	-	1	Program
	150 - SKL-2	Communication Skills	Required	-	2	Program
	150 -MATH-3	Calculus	Required	-	4	Program
Level 3	ISLM 111	Islamic Culture 1	Required	-	2	Institution
	ARB 201	Arab Writing Skills1	Required	-	2	Institution
	223 PHYS	Physiology	Required	-	2	Program
	204 PHST	Introduction to Physics	Required	-	2	Program
	250 TECH	Computer Applications in Health Sciences	Required	-	2	Program
	231 HIST	The Basics of Histology	Required	-	2	Program
	201 ANT	Anatomy -1	Required	-	2	Program
	241 RESH	Basics of Biostatistics	Required	-	2	Program
	207 BICH	Introduction to Biochemistry	Required	-	2	Program
	ISLM 112	Islamic Culture 12	Required		2	Institution

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 4	211 RAD	Radiation Physics	Required	204 PHST	3	Program
	221 RAD	Radiographic Anatomy	Required	201 ANT	3	Program
	223 RAD	Basics of General Radiographic Investigations	Required	201 ANT	3	Program
	224 RAD	Radiographic Physiology	Required	223 PHYS	3	Program
	204 ANT	Anatomy – 2	Required	201 ANT	2	Program
	242 RESH	Applied Biostatistics	Required	241 RESH	1	Program
	225 PROF	Patient Care	Required	-	3	Program
Level 5	312 RAD	Ultrasound Physics & Instrumentation	Required	204 RAD	3	Program
	313 RAD	Radiation Protection	Required	211 RAD	2	Program
	222RAD	Techniques of Radiographic Image Recording -1	Required	-	3	Program
	331 RAD	Practical Training (1)	Required	223 RAD	3	Program
	341 RAD	Radiological Pathology	Required		2	Program
	324 RAD	Special Radiographic Investigations	Required	223 RAD	3	Program
Level 6	304 RAD	Cross Sectional Anatomy	Required	204 ANT	2	Program
	314 RAD	Nuclear Medicine Physics	Required	-	2	Program
	325 RAD	Ultrasound Investigation Techniques	Required	312 RAD	3	Program
	326 RAD	Fluoroscopy Techniques	Required	-	2	Program
	328 RAD	Advanced Imaging Techniques	Required	-	3	Program
	332 RAD	Practical Training (2)	Required	324 RAD	3	Program
	351 RAD	Radiation Equipment & Management	Required	-	2	Program
	329 RAD	Techniques of Radiographic Image Recording -2	Required	222RAD	2	Program
Level 7	427 RAD	Computerized Tomography Techniques	Required	304 RAD	3	Program
	433 RAD	Practical Training (3)	Required	331 RAD	2	Program
	434 RAD	Practical Training (4)	Required	325 RAD	2	Program
	452 RAD	Advance Equipment	Required	-	3	Program
	442 RAD	Accident and Emergency Radiography	Required	-	2	Program
	443 RAD	Nuclear Medicine Techniques	Required	314 RAD	2	Program
	444 RAD	X-Ray Film Reading	Required	-	2	Program
Level 8	ISLM 113	Islamic Culture 3	Required	-	2	Institution
	ARB 202	Arab writing Skills2	Required	-	2	Institution
	435 RAD	Practical Training (5)	Required	427 RAD	2	Program
	436 RAD	Practical Training (6)	Required	443 RAD	2	Program
	445 RAD	Magnetic Resonance Imaging Techniques	Required	-	3	Program
	446 RAD	Radiology Departments Management	Required	-	2	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
	461 RAD	Scientific Research Methodology	Required	-	2	Program
Level 9	ISLM 114	Islamic Culture 4	Required	--	2	Institution
	438 RAD	Practical Training (7)	Required	445 RAD	2	Program
	547 RAD	Essential of Radiotherapy	Required	-	3	Program
	548 RAD	Applied Radiological Pathology	Required	-	2	Program
	562 RAD	Project Work	Required	461 RAD	2	Program
		Internship	Required			Program

* Include additional levels if needed
** Add a table for each track (if any)

3. Course Specifications

Insert hyperlink for all course specifications using NCAAA template

The manual of Radiological Sciences program available in the university website (http://portal.nu.edu.sa/web/applied-medical-sciences-college/150). Please see attachment

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)**

Program learning Outcomes (PLO's)											
Course	Knowledge		Skills				Competences				
	K.1	K2	S1	S2	S3	S4	C1	C2	C3	C4	C5
Physiology	I		I		I						I
Introduction to Physics	I		I			I					I
Computer Applications in Health Sciences	I					I					I
The Basics of Histology	I		I		I	I					I
Anatomy -1	I	I			I						I
Basics of Biostatistics	I					I				I	
Introduction to Biochemistry	I		I			I					I
Radiation Physics	P		P			P					P
Radiographic Anatomy	P				P						P
Basics of General Radiographic Investigations		I	P	P		P	P		P	P	P
Radiographic Physiology	P				P						P
Anatomy - 2	I				I						I

Patient Care		I	I			I				I	
Applied Biostatistics	I					I				I	
Ultrasound Physics & Instrumentation		I	I			I	I				
Radiation Protection	P		I			I					I
Techniques of Radiographic Image Recording -1		I		I	I	I	I				
Practical Training (1)		P	P	M	M		M	M	M	M	M
Radiological Pathology	P				I			I			
Special Radiographic Investigations		P	P	P	P		P				P
Cross Sectional Anatomy	P	P			P					P	
Nuclear Medicine Physics		P	I			P				I	
Ultrasound Investigation Techniques		M	P	P	P	P	P	P			P
Fluoroscopy Techniques		M	P	P	P		P	P			
Advanced Imaging Techniques		M	P	P		P	P	P			
Practical Training (2)		M	M	M	M		M	M	M	M	M
Radiation Equipment & Management		P		P		P	P				
Techniques of Radiographic Image Recording -2		P	P			P	P				
Computerized Tomography Techniques		M	P	P	P		P	P			P
Practical Training (3)		M	M	M	M	M	M	M	M	M	M
Practical Training (4)		M	M	M	M	M	M	M	M	M	M
Advance Equipment's		M	P	P	P	P	P	P			
Accident and Emergency Radiography		M	P	P	P		P	P	P		P
Nuclear Medicine Techniques		M	P	P	P	P				P	
X-Ray Film Reading		M			P			P			
Practical Training (5)		M	M	M	M		M	M	M	M	M
Practical Training (6)		M	M	M	M		M	M	M	M	M

Magnetic Resonance Imaging Techniques		M	M	M	P	P	P	P	P		P
Radiology Departments Management	P	P				M				M	
Scientific Research Methodology	P					M				P	M
Practical Training (7)		M	M	M	M		M	M	M	M	M
Essential of Radiotherapy	M	P	P			P	P				
Applied Radiological Pathology	M	M			M		M				
Project Work	M	M				M				M	M

* Add a table for each track (if any)

4. 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.

Code	Teaching and Learning Strategies	Extra–curricular activities that contribute to achieving learning outcomes
K1	Lecture Discussion Demonstration Problem solving Tutorial Presentation Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on in class and out of class activities	Assignments to help describing, summarizing, and connecting related information e.g. Making lists, tables, mind maps, graphs, photographs… etc. Library visits and google search for information and new ideas for presenting the information.
K2	Lecture Discussion Demonstration Problem solving Tutorial Presentation Problem-based scenarios Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on in class and out of class activities	Assignments to help illustrating, demonstrating, pointing out and distinguishing the use and effect of different interventions e.g. giving scientific comment on an educational video clip, answering questions on presented case studies, inquiry based assignments, making mind maps, comparative tables, illustrations ….etc. Library visits and google search for the updates related to different topics, answering inquiries and finding new ideas for presenting the information

S1	Lecture Inquiry based instruction Group discussion Assignment- Debates Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on in class and out of class activities	Assignments to help evaluating, judging, recommending and designing treatment plans e.g. identify problems and issues in a scenario presented in case study assignment, propose a treatment plan for a case or a condition, predict the influence of certain intervention. Library visits and google search for the updates and pros/cons related to the assessment and treatment plans of different conditions, answering inquiries and finding new ideas for presenting the information
S2	Demonstration Small group laboratory training case study Role play Group discussion Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on both in class and out of class activities	Library visits and google search for the updates in techniques and assessment tools. Watching training clips on different interventions and applications.
S3	Demonstration Small group laboratory training case study Problem-based scenarios Role play Group discussion Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on both in class and out of class activities	Library visits and google search for the updates in techniques and procedures. Watching training clips on different interventions and applications.
S4	Demonstration Small group laboratory training case study Role play Group discussion Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on both in class and out of class activities	Library visits and google search for the updates in techniques and procedures. Watching training clips on different interventions and applications. Collects the medical reports in hospitals Reads journals Design work plan for project research

C1	Group activities in lab. Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on both in class and out of class activities Group discussion Case studies Problem solving Brain storming.	Clinical training in a hospital (under supervision) Writing/ presenting reports, essays, reviews and/ or videos for improved applied radiology skills
C2	Group activities in lab. Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on both in class and out of class activities Group discussion Case studies Problem solving Brain storming..	Clinical training in a hospital (under supervision) Writing/ presenting reports, essays, reviews and/ or videos for improved applied radiology skills
C3	Group activities in lab. Assessment for learning using quizzes and Pop up questions. Reflective dialogue and feedback on both in class and out of class activities Group discussion Case studies Problem solving Brain storming.	Hospital clinical applied training (under supervision) Writing/ presenting reports, essays, reviews and/ or videos for improved applied radiology skills Proposing activities for raising awareness common conditions and radiology related issues.
C4	Open discussion Debates Assessment for learning using Pop up questions. Reflective dialogue and feedback on both in class and out of class activities Case studies Problem solving Brain storming.	Hospital clinical applied training (under supervision) Writing medical reports. Proposing activities for raising awareness common conditions and radiology related issues.
C5	Open discussion Debates Assessment for learning using Pop up questions. Reflective dialogue and feedback on both in class and out of class activities	Hospital clinical applied training (under supervision) Writing medical reports.

	Case studies Problem solving Brain storming.	Proposing activities for raising awareness common conditions and radiology related issues. Active participation with the supervisor of the project work

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.

No	Learning Outcomes Domains	Assessment Methods	
		direct	indirect
1.0	**Knowledge:**		
K.1	Explain the concepts of basic principles of medical sciences, physics and the associated applications.	• Written exams • Oral examination • Quizzes • Assignment • Presentations	• Students exit survey
K.2	Describe the methods of different medical imaging procedures.	• Written exams • Oral examination • Quizzes • Assignment • Presentations	• Students exit survey
2.0	**Skills:**		
S.1	Practice medical sciences applications and imaging procedures in medical laboratories.	• Practical exam • Assignments • Oral exams. • Student presentation / seminar.	• Students exit survey
S.2	Operate effectively and safely the different medical	• Practical exam • Assignments.	• Students exit survey

	imaging modalities with the optimal care and protection.	• Oral exams. • Student presentation / seminar.	
S.3	Evaluate the medical images of different modalities and differentiate between the normal and abnormal appearance	• Practical exam • quizzes • Assignments. • Oral exams. • Student presentation / seminar.	• Students exit survey
S. 4	Demonstrate basics management and research skills.	• Practical exam • quizzes • Assignments. • Oral exams. • Student presentation / seminar.	• In depth interviews/ Focus group discussion with health team members in hospitals (by the end of internship experience).
3.0	**Competence:**		
C.1	Manage the operation of different medical imaging modalities effectively and accurately.	• Practical exam • Assignments. • Oral exams. • Student presentation / seminar. • Log book • Performance evaluation • Discussion	• In depth interviews/ Focus group discussion with health team members in hospitals (by the end of internship experience).
C.2	Acquire an interpretable high quality image utilizing different imaging modalities.	• Practical exam • Assignments. • Oral exams. • Student presentation / seminar. • Log book • Performance evaluation • Discussion	• In depth interviews/ Focus group discussion with health team members in hospitals (by the end of internship experience).
C.3	Carry out the optimal imaging examinations dependant on the assessment of patient conditions and safety requirements with ethical and legal manners.	• Practical exam • Assignments. • Oral exams. • Student presentation / seminar. • Log book • Performance evaluation • Discussion	• In depth interviews/ Focus group discussion with health team members in hospitals (by the end of internship experience).
C4	Communicate effectively with patient, colleagues	• Practical exam • Assignments. • Oral exams.	• In depth interviews/ Focus group discussion with health

	and other health professionals.	• Student presentation / seminar. • Log book • Performance evaluation Discussion • Project work	team members in hospitals (by the end of internship experience).
C5	Demonstrate teamwork and inter-professional collaboration	• Practical exam • Assignments. • Oral exams. • Student presentation / seminar. • Log book • Performance evaluation • Discussion • Project work	• In depth interviews/ Focus group discussion with health team members in hospitals (by the end of internship experience).

D. Student Admission and Support:

1. Student Admission Requirements

In accordance with the university regulations concerning undergraduate tuition and examinations issued by the high education council decision number (5/2) taken in its session (second) of the High Education Council on 11/06/1416, students who are eligible for admission are those who have the Saudi Secondary School Certificate (science section) or its equivalent and passed Aptitude Exam provided by National Centre for Measurement and Evaluation in Higher Education (general capabilities + achievement for health and scientific specialties). The priority of acceptance for admission has been given to those applicants with the highest percentage (70% of the secondary school grade + 30% of aptitude exam grade). Applications are submitted electronically to the Deanship of Admission and Registration in the specified periods for each semester. Moreover, the applicants must fulfill the following admission requirements :

1- The applicant must be a Saudi citizen or from a Saudi mother.

2- The applicant must not have obtained the secondary school certificate for a period of more than five years ago.

3- The applicant must successfully pass any examination or personal interview determined by the university.

4- The applicant must be medically fit.

5- The applicant must be under the age of (30) years.

6- The applicant cannot have a Bachelor's degree from another university.

7- The applicant must fulfill any other requirements determined by the University Council and announced at the time of application.

8- The applicant must not be expelled from another university due to disciplinary or educational reasons.

2. Guidance and Orientation Programs for New Students

The program organizes a welcome and orientation day for the new admitted students to welcome them and discuss the principles of academic counseling and support. Moreover, in this day, the new students

discuss their interests about the program and any problem that faced them. In addition, the academic advisor gives the student the printed program manual to be aware of the program facilities, laboratories and teaching staff.

3. Student Counseling Services
(academic, career, psychological and social)

- Academic guidance and supervision:
An academic advisor is assigned to provide guidance and supervision for the group of students at each level of the program.
Duties of the academic advisor are:
(a) Resource Agent—to provide accurate and timely information about the curriculum, co-curriculum, college policies, and administrative issues.
(b) Interpreter—to help students make sense of, and develop appreciation for the college/ program mission, curricular requirements (e.g., the meaning, value, and purpose of learning), and co-curricular experiences (e.g., the importance of out-of-class experiences for student learning and development).
(C) Liaison/Referral Agent—to connect students with key academic support and student development services.
(d) Teacher/Educator—to help students gain self-insight into their interests, aptitudes, and values; enables students to see the "connection" between their academic experience and their future life plans; and promotes students' skills in problem-solving, decision-making, and critical thinking with respect to present and future educational choices.

Office hours are declared by each course coordinator to provide academic support related to the course.

The program provides placement opportunity for the students by providing clinical and field training for some courses and an internship for a period of 6 months after successful completion of all the courses (the program organizes weekly visits for the interns in the hospitals for providing consultation and support).
The students can obtain psychological and social support via the central unit for psychological counselling at the university. The unit provides periodic counselling services for groups and individuals in different specialists (Educational, Personal, Psychological, Social, Career and Health), the unit handles all the information and data of the students with a great deal of confidentiality.

4. Support for Special Need Students
(low achievers, disabled, gifted and talented)

The program has policies and regulations concerning support for low achievers, disabled, gifted and talented students.

1- For low achievers' students: The program prepares a list of low achievers' students and designs a plan for helping those students to achieve the intended learning outcomes of their courses. The academic advisor member who is responsible for those students follow them strictly throughout the academic year to assure meeting of the recommended academic achievement.

2- For disabled students: The program does not accept students with special needs as the nature of the program depends on the physical ability of the student.

3- For gifted and talented students: The program encourages talented students by:
- Hanging their names on the Honorary board.
- Guiding and supporting talented students through the Gifted Club.
- Talented student are treated according to university regulation of award system.
http://www.nu.edu.sa/web/deanship-of-admission-and-registration

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	**Radiological and medical imaging**	-General and special radiological procedures. - Nuclear medicine. -Ultrasound. -MRI. - CT. -Medical Physics.		**4**	**4**	**8**
Associate Professors	**Radiological and medical imaging**	- General and special radiological procedures. - Nuclear medicine. -Ultrasound. -MRI. - CT. -Medical Physics.		**8**	**8**	**16**
Assistant Professors	**Radiological and medical imaging**	- General and special radiological procedures. - Nuclear medicine. -Ultrasound. -MRI. - CT. -Medical Physics.		**8**	**8**	**16**
Lecturers	**Radiological and medical imaging**	- General and special radiological procedures. - Nuclear medicine. -Ultrasound. -MRI. - CT. -Medical Physics.		**8**	**8**	**16**

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Teaching Assistants	**Radiological and medical imaging**	- General and special radiological procedures. - Nuclear medicine. -Ultrasound. -MRI. - CT. -Medical Physics.		**8**	**8**	**16**
Technicians and Laboratory Assistants	**Radiological and medical imaging**	- General and special radiological procedures. - Nuclear medicine. -Ultrasound. -MRI. - CT. -Medical Physics.		**5**	**5**	**10**
Administrative and Supportive Staff	**Secretary**			**8**	**8**	**16**
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

Orientation program for new teaching staff includes two main parts:

Part One:

Open lecture on the following topics:

- Development projects at Najran University.
- Knowledge and educational resources.
- Activities carried out by Najran University.
- Training and professional development of faculty member.
- Scientific research at Najran University.
- The rights and duties of the faculty member.
- E-learning and distance learning.

Part 2:

Specialized training courses and workshops aimed at developing teaching skills:

The university represents a total of 10 training hours for new teaching staff on the following topics:

- Preparation of course description and report (3 hours)
- Effective teaching skills (3 training hours)
- Student assessment skills (2 hours of training)
- Executive Mechanisms at College and University (2 Training Hours)

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.)

- The skills development committee assesses the annual training needs for the faculty members. The training plan includes workshops on the institutional, professional and personal needs. The needs are studied on the light of the training –impact assessment report of the previous year. Training plans are designed by the responsible committee to satisfy the faculty needs according to their priority and availability of resources.

Additional training workshops are annually offered to the faculty members by deanship of development and quality addressing the following areas:

- Updates in Quality assurance and academic accreditation standards.
- Saudi Qualification Framework
- Registration in the electronic platform (SAQF)
- Updates in Program Specifications.
- Updates in Course Specifications.
- Updates in Assessment of learning Outcomes
- KPIs and closing the quality loop.
- Updates in Annual program report.
- Updates in Courses report.
- The role of the leadership of scientific departments in achieving program accreditation
- Quality requirements for academic advising & guidance services
- Updates in Self-study report.

Faculty and teaching staff are also provided with the chance to attend conferences inside and outside the kingdom as regulated by the university, to facilitate that, a clear policy has been developed to guide the faculty to attend scientific conferences, seminars, workshops, and presentations to acquire a range of professional experiences and skills.

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.)

Deanship of Libraries Affairs at Najran University is encouraging the faculty members in all departments/programs to prepare annual lists for required and recommended text books and other learning resources to be provided at the beginning of each academic year.

The program conducts annual surveys to monitor satisfaction of the students and teaching staff with the available learning resources and uses the results of those surveys and the comments mentioned by the teaching staff and students to improve the quality of learning resources.

2. Facilities and Equipment
(Library, laboratories, medical facilities, classrooms, etc.).

Library:

There is a library for the college. It is easily accessible to the teaching faculty and the students. Library has seating arrangements for at least 60 students for reading and having good lighting , ventilation, computers, internet facility and space for stocking and displaying of books and references

The college library and the university central library are available and provided the students with a recent and modern radiological references and books. In addition, the University of Najran offers a service to researchers by participating in the Saudi Digital Library, which includes more than 680,000 e-books in various scientific disciplines and more than 300 international publishers. The library provides all Saudi universities with a single umbrella, through which they negotiate with publishers on various legal and financial issues. This is a great saving for money and efforts. The bloc encourages a single umbrella through which it can obtain more benefits and rights for publishers.

Male section:

	Lab.	**Type**	**The courses served by the lab.**
1	Ultrasound lab. Unit	Educational	**Ultrasound Physics & Instrumentation** **Ultrasound Investigation Techniques** **Practical Training (4)**
2	General x-ray lab, Unit & demonstration room	Educational	**Basics of General Radiographic Investigations** **Practical Training (1)**
3	Nuclear medicine lab, Unit	Educational	**Nuclear Medicine Physics** **Nuclear Medicine Techniques** **Practical Training (6)**
4	Fluoroscopic lab Unit	Educational	**Fluoroscopic technique**
5	CT Lab& demonstration room	Educational	**Computerized Tomography Techniques** **Advanced Imaging Techniques** **Practical Training (5)**
6	MRI lab and demonstration area	Educational	**Magnetic Resonance Imaging Techniques** **Practical Training (7)**
7	General physics lab , Unit	Educational	**Introduction to Physics** **Radiation Physics** **Radiation Protection**
8	Radiation physics lab , Unit	Educational	**Radiation protection**
9	Dark room Unit	Educational	**Techniques of Radiographic Image Recording -1** **Techniques of Radiographic Image Recording -2**

10	Computer lab	Educational	**Computer Applications in Health Sciences**

Female section:

	Lab.	**Type**	**The courses served by the lab.**
1	Ultrasound lab. Unit	Educational	**Ultrasound Physics & Instrumentation** **Ultrasound Investigation Techniques** **Practical Training (4)**
2	General x-ray lab, Unit & demonstration room	Educational	**Basics of General Radiographic Investigations** **Practical Training (1)**
3	Nuclear medicine lab, Unit	Educational	**Nuclear Medicine Physics** **Nuclear Medicine Techniques** **Practical Training (6)**
4	General physics lab , Unit	Educational	**Introduction to Physics** **Radiation Physics** **Radiation Protection**
5	CT Lab& demonstration room	Educational	**Computerized Tomography Techniques** **Advanced Imaging Techniques** **Practical Training (5)**
6	Computer lab	Educational	**Computer Applications in Health Sciences**

All the labs are well designed and equipped with recent and well maintained educational tools and devices to cope with the educational purpose they serve. A full list is attached for more details about specifications and equipment of each lab.

Medical facilities:
Central university clinic
Radiology unit in hospital university

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

The program complies with the arrangements, rules and regulations of the university regarding maintenance of healthy and safe environment for students, teaching and administrative staff while performing their activities and responsibilities inside the college.

The program provides specific direct instructions, brochures, manuals and training for the users of labs and different instruments and devices and monitor compliance to assure their safety.

The college is equipped with different safety measures and tools to manage risks and emergencies.

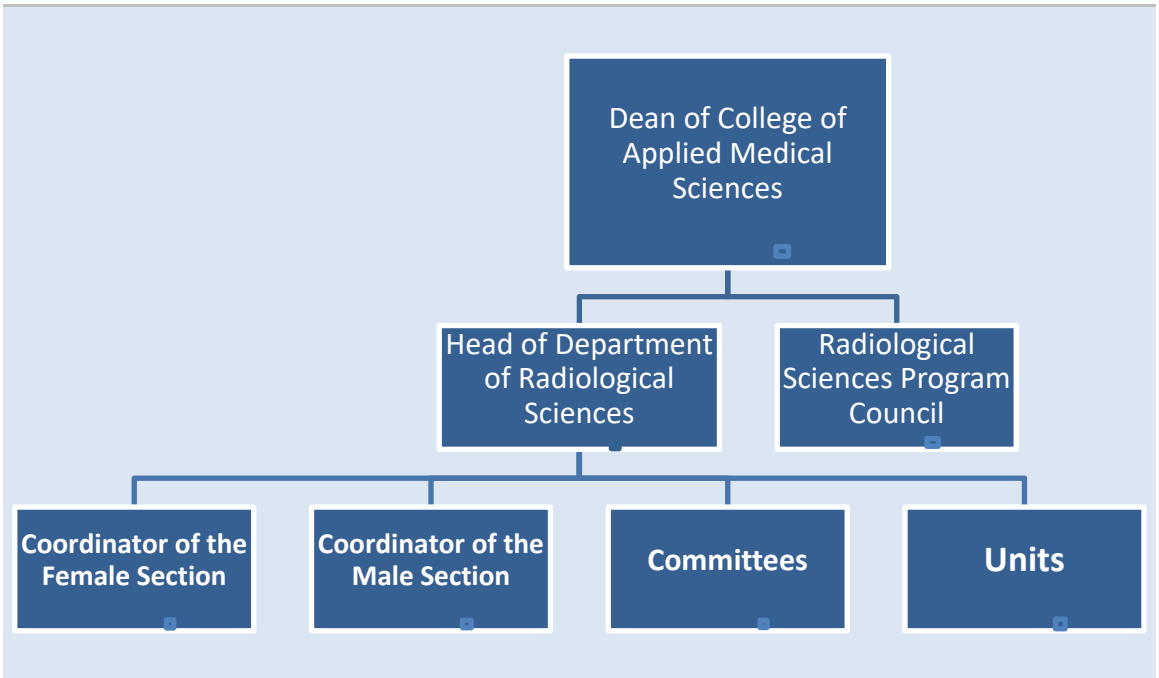
For the learning and training activities conducted outside the college the program applies strict criteria for choosing reputable hospitals which comply with the arrangements, rules and regulations of the ministry of health.

The program provides orientation for the students before field training to raise their awareness and assure their understanding of all safety and infection control measures, rules and regulations during their training.

G. Program Management and Regulations

1. Program Management
1.1 Program Structure
(including boards, councils, units, committees, etc.)

Program organization structure



The program is headed by the Chairman and is supported by different committees and units which are involved in different matters of administration and academic issues. These committees involve all faculty members who help in directing the Department.

The units include:

- academic advising unit
- development and quality unit
- internship unit
- alumni unit
- internship unit

The committees include:

- community service committee
- scientific research committee
- E-learning committee
- website committee
- learning resources committee
- teaching and learning committee
- complains and suggestions committee
- disciplinary committee
- facilities and equipment committee
- academic accreditation committee
- supervising on laboratories committee
- PY courses committee
- Level 3 courses committee

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.)

We Maintain open, honest, and regular communication with the stakeholders by keeping them up to date with related issues.
Regular meetings are organized with the Advisory Committee for Health Colleges to discuss issues related to planning, evaluation and improvement processes of the program.
Students, alumni and employers are involved in annually evaluation of program through a survey covering all aspects of the program in addition to the evaluation of alumni quality by employers.
External evaluation for the program is conducted in a cycle of 5 years (The last evaluation was conducted in 2015 by AHPGS which granted the program a full accreditation).
Teaching and learning unit of the deanship of quality and development conducts review for the annual reports of the program to monitor quality.

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.)

Admission and registration:
https://dadr.nu.edu.sa/#
Study and exams
https://dadr.nu.edu.sa/en/#
Academic advising:
https://amsc.nu.edu.sa/122
Alumni unit
https://amsc.nu.edu.sa/478
Recruitment:
Appeals complaint regulations
https://amsc.nu.edu.sa/509

H. Program Quality Assurance

1. Program Quality Assurance System

Provide online link to quality assurance manual
https://amsc.nu.edu.sa/en/123

- Quality and Development Unit was established in Applied Medical Sciences College according to the administration decision of Vice-President for Development and Quality No. (4/1431) dated 23/07/2010.

- The Deanship of Development and Quality in Najran University provides all colleges with support necessary for quality management and is responsible for evaluating and monitoring the achievement of Plan and Activities of the quality Unit.

- The evaluation of achievement of the quality Plan is carried out on a regular basis (every three months and at the end of each academic year).

Annual program report including all data and information about the program quality and proposed improvement actions are discussed in a formal meeting of the department council and application

of proposed corrective actions and improvement activities are monitored by the head of the department and the unit of teaching and learning.

A comprehensive evaluation for the program is conducted in 5 years cycle and a self-study report is compiled to apply for external review by national/ international accreditation bodies.

Improvement plan is designed to meet the recommendations and suggestions mentioned in the external review report.

2. **Program Quality Monitoring Procedures**

Regarding the courses taught by other departments the program applies the following measures:

- The specifications are reviewed by the program committee to assure that the learning outcomes of the courses are aligned with the program learning outcomes according to the program matrix, and to make sure that the contents and topics mentioned in the specification, teaching strategies and assessment methods are aligned with the learning outcomes.
- Regular reviewing of course contents and specifications is conducted to assure coping with the improvements at the level of the program.
- Every course instructor submits a report at the end of each semester that discussed the quality of the course and achievement of its ILOs.
- Students' feedback is conducted and the report is attached with the submitted annual course report.
- Implementation of the activities mentioned in the improvement plan is monitored by the program coordinator.

3. Arrangements to Monitor Quality of Courses Taught by other Departments.

NA

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

The program is offered only in main campus.
In both male and female sections, courses are delivered by using the same courses specification including the same teaching and assessment methods.
The mid and final exams have the same timetable.
Both male and female members are participating in electronic surveys on their satisfaction about the efficiency and adequacy of learning resources, facilities and equipment.

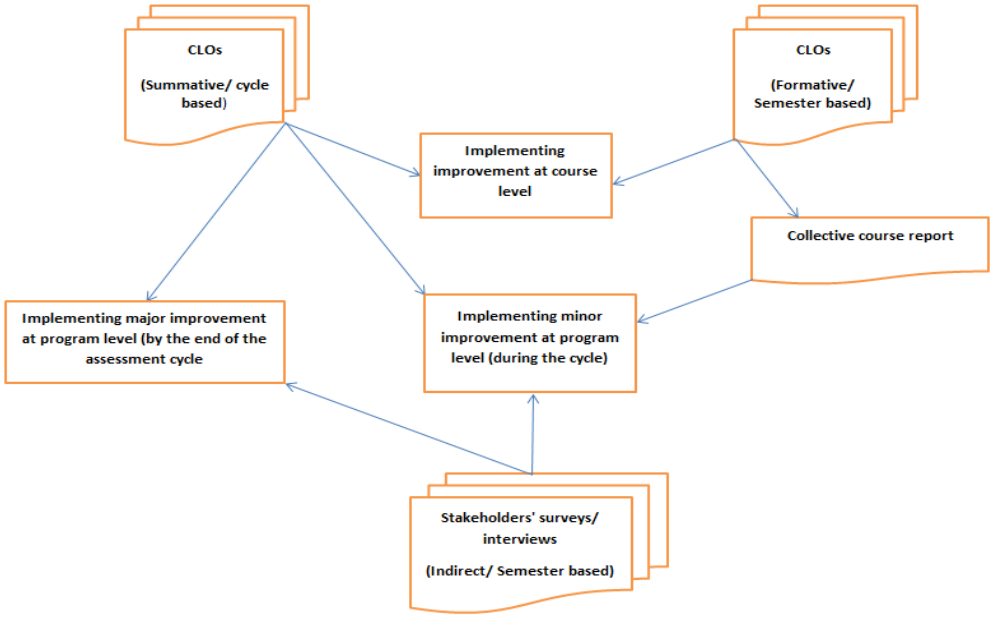
The program applies the following arrangements:
Promote communication between both of the sections (male & female).
Verify the fair distribution of resources between both of the sections.
Reaching an equal quality level of the outcomes.
Participation in the programmatic accreditation work between them.
Participation the faculty members of both section (male & female) in all committees and units.
Participation the faculty members of both section (male & female) in the program and courses specification process and reports.

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

The program recently has not educational or research partnerships

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

The program uses CLOs for direct assessment of PLOs, in addition to exit survey and interviews with the stakeholders as indirect methods for assessment. The results are used for continuous improvement during the assessment cycle of PLOS – which extends for a period of 3 years- while major changes at the level of the program are implemented by the end of the assessment cycle as illustrated by the following figure:



The following table provides more details about the assessment methods used for assessment of PLOs and uses of their results in improvement process:

PLOs	Assessment method		
Code	*Direct (using course learning outcomes)		Indirect (using surveys and interviews) Semester based
	Formative (semester based)	Summative (cycle based)	
K1	Related learning outcomes of the courses contributing to the achievement of this PLO (at level I and P) as mentioned in Program learning Outcomes Mapping Matrix.	Average students' achievement of related learning outcomes of the **Advanced** courses (level M) contributing to the achievement of this PLO as mentioned in Program learning Outcomes Mapping Matrix.	Student exit survey.
K2			
S1			
S2			
S3			Students exit survey. In depth interviews/ Focus group discussion with health team members in hospitals.
S4			
C1			
C2			
C3			
C4			
C5			
Uses of the results	- Corrective and improvement	During the cycle: - Corrective and improvement	- Accentuate the results of both formative and

	measures at the course level. - Monitor progress in PLOs achievement and making continuous corrective and improvement actions at the program level (minor) to assure achievement of PLOs by the end of the program. - Monitor individual student achievement of CLOs/PLOs to provide suitable academic support for the students at risk to improve and assure their achievement for PLOs by the end of the program.	measures at the course level. - Continuous corrective and improvement actions at the program level (minor). By the end of the cycle: - Major corrective and improvement actions at the program level.	summative direct assessment. - Highlight the possible reasons for weak achievement, from the perspective of the stakeholders, which help in setting priorities and taking better informed corrective actions and improvement plans.

The assessment cycle of program learning outcomes extends for 3 academic years during which all the PLOs will be assessed and continuous improvement actions and minor changes are implemented while plans for implementing the required major changes "if any" will be designed by the end of the assessment cycle, the following table illustrates the timeline for collection of data and evaluation of the results and time for implementing the required improvement for each PLO:

PLOs	1st year of assessment cycle		2nd year of assessment cycle		3rd year of assessment cycle	
	1st semester	2nd semester	1st semester	2nd semester	1st semester	2nd semester
Knowledge						
K1	C/E	I				
K2		C/E	I			
Skills						
S1		C/E	I			
S2			C/E	I		
S3				C/E	I	
S4					C/E	I
Competences						
C1					C/E	I

C2					C/E	I
C3				C/E	I	
C4				C/E	I	
C5					C/E	I

Closing the loop:

Communicating the results of assessed PLOs to all the associated parties is assured by discussing the assessment reports at the level of the program council to define possible root causes for less than expected achievement and set the program.

- Communicating the results of assessed PLOs to all the associated parties is assured by discussing the assessment reports at the level of the program council to define possible root causes for less than expected achievement and set the program priorities for improvement and possible strategies and actions for improvement.

Implementation of the corrective actions and improvement plans and evaluation of their impact on subsequent achievement is keenly monitored by the program via course reports and program reports submitted by the end of each semester.

7. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Mission and Goals	Program coordinator	Information and data analysis	End of academic year
Teaching and Learning	Students	surveys	End of each semester.
	Deanship for admission and registration	Information and data analysis	
	Vice-Rector For Academic Affair		
	Alumni office		
	Program coordinator		
Students	Alumni office, Employers	Survey	End of each semester.
	Students at the last level of the program		By the end of each academic year
Teaching staff	Program coordinator and related committees	Information and data analysis	By the end of each academic year
Learning Resources, Facilities, and Equipment	Teaching staff, students	Surveys	

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*

The period to achieve the target (5) year.

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	80%	Statistical analysis of data	Annually
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	80%	Surveys of students quality learning experiences	By semester
3	KPI-P-03	Students' evaluation of the quality of the courses	80%	Surveys of students course quality	By semester
4	KPI-P-04	Completion rate	50%	Statistical analysis of data	By semester
5	KPI-P-05	First-year students retention rate	80%	Statistical analysis of data	By semester
6	KPI-P-06	Students' performance in the professional and/or national examinations	80%	Statistical analysis of Student performance data in professional	By semester
7	KPI-P-07	Graduates' employability and enrolment in postgraduate programs	≥ 60% ≥ 30%	Statistical analysis of graduates data base	By semester
8	KPI-P-08	Average number of students in the class	15	Statistical analysis of students data base	By semester
9	KPI-P-09	Employers' evaluation of the program graduates proficiency	80%	Surveys of employers for efficiency graduates	By semester
10	KPI-P-10	Students' satisfaction with the offered services	80%	Surveys of students on provided services	Annually
11	KPI-P-11	Ratio of students to teaching staff	15:1	Statistical analysis of students and faculty data	Annually
12	KPI-P-12	Percentage of teaching staff distribution	50% PhD 25% MSc 25% BSc	Statistical analysis of faculty data base	Annually
13	KPI-P-13	Proportion of teaching staff leaving the program	<25%	Statistical analysis of faculty data base	Annually
14	KPI-P-14	Percentage of publications of faculty members	50%	Statistical analysis of scientific published data	Annually
15	KPI-P-15	Rate of published research per faculty member	1:3	Statistical analysis of scientific published data	Annually
16	KPI-P-16	Citations rate in refereed journals per faculty member	1:1	Statistical analysis of scientific published data	Annually

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
17	KPI-P-17	Satisfaction of beneficiaries with the learning resources	80%	Surveys of students and faculty to learning resources	Annually
18	KPI-RAD-1	Proportion (percentage) of faculty members participating in community service activities	80%	Statistical analysis of data base of community service activities	Annually
19	KPI-RAD-2	Proportion (percentage) of faculty members engaged in professional development activities	80%	Statistical analysis of data base of professional development activities	Annually

* including KPIs required by NCAAA

I. Specification Approval Data

Council / Committee	**DEPARTMENT COUNCIL**
Reference No.	
Date	**11-2020**