

Akkreditierungsagentur für Studiengänge
im Bereich Gesundheit und Soziales
Accreditation Agency for Study Programs
in the Area of Health and Social Sciences



Assessment Report

**for the Application of
Taibah University,
Faculty of Applied Medical Sciences,
Department of Diagnostic Radiology Technology
for the Accreditation of a Bachelor of “Diagnostic Radiology
Technology”**

On-site visit	December 12 and 13, 2022
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Decision	February 16, 2023

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1 Introduction

The Accreditation Agency for Study Programs in Health and Social Sciences (AHPGS) is an interdisciplinary and multi-professional organization. Its mission is to evaluate Bachelor and Master's programs in the fields of health and social sciences, as well as in related domains, such as law or economics. By implementing accreditation and recommendation procedures, the AHPGS contributes to the improvement of the overall quality of teaching and learning. However, the higher education institutions remain responsible for fulfilling the quality assurance, too.

Since 2004 the AHPGS has been a member of the European Consortium for Accreditation (ECA). In 2006, the AHPGS also joined the ENQA and became a member of the International Network for Quality Assurance Agencies in Higher Education (INQAAHE) in 2009. Since 2012, the AHPGS has been a member of the Network of Central and Eastern European Quality Assurance Agencies in Higher Education (CEENQA). Starting from 2009, the AHPGS has been listed in the European Quality Assurance Register (EQAR).

In carrying out accreditation procedures, the AHPGS follows the requirements of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). In the present case, the decision regarding the accreditation of the study program is carried out by the AHPGS Accreditation Commission based on the following accreditation criteria¹:

1. Program aims and learning outcomes
2. Curriculum design
3. Personnel
4. Facilities and learning resources
5. Study process and student assessment
6. Program and quality management
7. Gender equality and equal opportunities

¹ Approved by the AHPGS Accreditation Commission

The external assessment procedure is carried out in four steps:

I. The University's application

The AHPGS verifies the sufficiency of the documents submitted by the University, namely the self-evaluation report and its corresponding annexes. These are to fulfill the assessment spheres as well as the AHPGS standards. As a result, the AHPGS produces a summary (see Sections 2-5), which is to be approved by the University and subsequently made available for the expert group, together with all other documentation.

II. Written review

The main documents are reviewed by the expert group assigned by the accreditation commission of AHPGS. This is done in order to verify the compliance of the study program with the above-mentioned criteria. Consequently, the experts comprise a short summary regarding the study programs.

III. On-site visit (peer-review)

The experts carry out an external on-site visit at the University. During this visit discussions are held with members of the University, which include University and department administration, degree program management, teachers and students. This provides the expert group with details about the study program beyond the written documents. The task of the experts during the on-site visit is to verify and evaluate the objectives of the program and its projected study results, its structure, staff, material resources, course of studies and methods of assessment (selection of students, assessment of achievements, students' support), as well as of the program management (program administration, external assurance of study quality).

Following the on-site visit, the expert group issues the expert report. This report is based on the results of the visit, the written review of the study programs, and the documents submitted by the University. Finally, the report is made available to the University so that it can issue a response opinion.

The expert report as well as the University's response opinion – together with the provided documents – is submitted to the accreditation commission of the AHPGS.

IV. The AHPGS accreditation decision

The accreditation commission of the AHPGS examines the documentation made available in the process of application, namely the University's self-evaluation report, its annexes, the summary comprised by the AHPGS, the expert report, as well as the University's response opinion. These documents represent the basis for the commission's decision regarding the accreditation of the study program.

2 Overview

2.1 Procedure-related documents

The Taibah University delegated the task of accrediting its Bachelor study programs “Diagnostic Radiology Technology”, “Nursing”, “Clinical Nutrition” as well as “Clinical Laboratory Sciences” to AHPGS.

The self-evaluation report for accreditation (without the awarding of the official seal of the Accreditation Council of the Foundation for the Accreditation of Study Programs in Germany) of the above-mentioned study programs (hereinafter the Self-evaluation report) of Taibah University (hereinafter the University) was submitted to the Accreditation Agency in Health and Social Science (AHPGS e.V.) in electronic format on February 14th, 2022. The decision regarding the accreditation of a study program is carried out by the Accreditation Commission of AHPGS. The contract between Taibah University and the AHPGS was signed on June 16th, 2021.

On June 9th, 2022 the AHPGS forwarded the open questions and explanatory notes (hereinafter OQ) pertaining to the Application for accreditation for the study programs to the University. On July 21st, 2022 the University submitted the answers to the open questions and explanatory notes (hereinafter AOQ) to the AHPGS in electronic format.

The present document presents the summary of the AHPGS for the Bachelor study program “Diagnostic Radiology Technology”. The first cohort for this program was admitted in 2010.

The application documentation submitted by the University follows the outline recommended by the AHPGS. Along with the application request towards accreditation of the Bachelor study program “Diagnostic Radiology Technology”, the following additional documents can be found in the application package (the documents submitted by the University are numbered in the following order for easier referencing):

Specific documents for the study program “Diagnostic Radiology Technology”:

Annex 01	Program and Course Specification
Annex 02	Program Tree
Annex 03	Field Experience Specification
Annex 04	Internal Quality System in Colleges
Annex 05	Program Learning Outcome Plan
Annex 06	Internship Booklet
Annex 07	Field Experience Report
Annex 08	Employers' satisfaction
Annex 09	Biostatistics and Research Methodology Course Specification
Annex 10	Graduation Project Course Specifications
Annex 11	Graduation Project Report + Samples
Annex 12	Benchmark
Annex 13	Course Evaluation Survey
Annex 14	Alumni Survey
Annex 15	System and Regulations of Higher Education Council
Annex 16	The Guide Manual for Job Performance Management Regulation
Annex 17	Module Descriptions
Annex 18	Teaching Matrix
Annex 19	Teachers' CV

Alongside the study-program-specific documents, the following documents pertain to all study programs submitted to AHPGS for evaluation:

Annex A	Rules and Regulations of Undergraduate Study and Examinations
Annex B	Academic Program Preparation Handbook
Annex C	National Qualification Framework for Higher Education

Annex D	University Enrollment Guide
Annex E	Digital Transformation Program
Annex F	Admission and Registration Guide
Annex G	Quality Assurance System
Annex H	Students' Rights and Obligations
Annex I	Covid-19 Adaptions
Annex J	Directory College of Applied Medical Sciences
Annex K	Student Disability Center Guide
Annex L	Accreditation Certificate
Annex M	Handbook of Safety Instructions in Laboratories
Annex N	College of Applied Medical Sciences Strategic Plan
Annex O	Agreement letter with MOH
Annex P	System and Regulations of Higher Education Council
Annex Q	Regulations for Saudi Staff
Annex R	Regulations for Non-Saudi Staff
Annex S	Taibah University Strategic Plan
Annex T	Ethical Professional Code
Annex U	Statistics and Information Unit Report and Alumni Unit Report

The application, the open questions (OQ) and the answers to the open questions (AOQ), as well as these additional documents, together build the basis for the present summary. The layout bears no significance, as it solely reflects the agreed standard within the University.

2.2 Study program

2.2.1 Structural data

University	Taibah University
Faculty	College Applied Medical Sciences
Department	Diagnostic Radiology Technology
Cooperation partner	King Fahad Hospital; Ohud Hospital; Maternity and Children's Hospital; Alansar Hospital; Almeqat Hospital and Madinah Cardiac Center
Title of the study program	"Diagnostic Radiology Technology"
Degree awarded	Bachelor of Diagnostic Radiology Technology
Form of studies	Full-time, on-campus
Organisational structure	5 Days a week (Sunday to Thursday) 8 am to 4 pm for 156 weeks Each trimester has 13 weeks Each year has 3 trimester = 39 weeks
Period of education	4 years / twelve trimesters (preparatory year included) + 1 year noncredit internship
Credit Hours (CH) according to the Credit Hour System	134 Credit Hours (equals 228 ECTS Credit Points)
Hours/CP	1 Theory Credit Hour = 1 Hour 1 Lab/Practical Hour = 2 Hours 1 Hospital Training/Field Training Hour = 3 Hours
Workload	Total: 6,885 hours Contact hours: 2,745 hours Individual work: 2,850 hours Internship: 1,290 hours
Launch date of the study program	2010
Time of admission	Fall Semester

Number of available places in the program	Council of the University decides the number of available places depending on the proposal of the Councils of Colleges and related bodies at the University In the last five years 45 students per year
Number of enrolled students to date	Number of total currently enrolled students: 296; 106 (males); 190 (females) Number of accepted students in the program since 2008: 240 males ; 234 females
Number of dropouts to date	6: 4 (males); 2 (females)
Number of graduates to date	172: 130 (males); 42 (females)
Particular enrollment conditions	Saudi Arabian High School Certificate (science section) or its equivalent; General Aptitude Test (GAT) (provided by the National Centre for Assessment in Higher Education).
Tuition fees	Free

Table 1: Structural data of the study program

2.2.2 Qualification objectives and employment opportunities

The vision of the University is to be an internationally recognized, comprehensive institution which is dedicated to excellence in teaching, research and community service. Therefore, it has set up the mission to contribute to society building that promotes sustainable development, knowledge economies through education, research and community partnership in a stimulating environment for learning and creativity.

According to the university, the program's learning objectives are to bring the students to be able to (SER 1.3.2):

- evaluate the importance of life-long learning to adapt to professional changing environments

- operate as entry level radiologic technology specialists
- communicate as an active member of healthcare.
- exhibit the level of clinical competency and patient care
- foster independent critical thinking and leadership skills
- participate in scientific research and community service activity
- build teamwork and leadership skills
- develop higher stamina in the face of intense difficulties

Taibah University follows the National center for Academic Accreditation and Assessment (NCAAA) standards as per the National Qualifications Framework for Saudi Arabia the learning outcomes, overarching skill, and competencies for the “Diagnostic Radiology Technology” program are categories according to the domains of learning. The students acquire the knowledge and skills required in the following five domains according to the approved program specifications which are derived for National Accreditation Standards: knowledge; cognitive skills; interpersonal skills and responsibility; communication, information technology, numerical, psychomotor. (SER 1.3.3)

After graduating, students can get jobs in governmental and private health facilities, such as hospitals, health centers and medical equipment companies. They can work as a radiology technologist in various diagnostic radiology units (Radiography, CT scan, MRI, NM and US) and can work in the field of radiation protection and quality management and quality control. They also have job opportunities in the education departments and research centers. (SER 1.4.1)

According to the Saudi Commission for Health Specialists, the average population growth in Saudi Arabia is 2,7% whereas the radiology technicians to population ratio is 1 to 3.000. Therefore, the Saudi Radiology technologist's attrition rate is 5% and the local and abroad students' attrition rate is 10%. (SER 1.4.2)

2.2.3 Modularization and exam system

The program comprises 52 modules, out of which 10 are in the unified scientific track and 42 are specialized and supportive modules. There are between six and eight modules in total provided for each trimester. All

modules have to be completed within one trimester. The 10 modules from the unified scientific track are compulsory and have to be taken during the first year of studies. The other 42 modules should be taken during the second, third and fourth year. From these required modules there are 2 free elective courses and one specialized elective course. Students should take between 8 and 13 credit hours per trimester, 13 credit hours per trimester being the optimum number of credit hours taken per trimester. Moreover, a maximum of 9 credit hours is set for summer trimester. Clinical experience is a key element of the program. Therefore, students start clinical practice during levels 6, 7 and 8. The internship is for 48 weeks in the faculty accepted hospitals under the faculty supervision. (SER 1.2.1)

There are 31 program-specific modules (86 credit hours). Moreover 2 modules are provided by the College of Medicine (7 credit hours) and 1 module is provided by the College of Pharmacy (2 credit hours). 17 modules are studied with students from other programs (40 credit hours).

Internal quality assurance is ensured through the course report cycle provided by other study programs of the university. This assures the reviewing of the courses' contents and objectives and the continuous coordination and consultation with other departments.

Regarding the modules taught by another department, the Head of the Department decides on what modules are required each trimester. He then issues an official letter to the Vice Dean for Educational Affairs, who then contacts the specific department to request for a teaching staff to teach the selected modules. (SER 1.2.2)

The study program structure is as follows:

Level	Course Code	Course Title	Required or Elective	Credit Hours	College or Department
Level 1	GS 111	Arabic Language Skills (1)	Required	2	Deanship of Preparatory Year
	CHEM 101	Introduction to Chemistry	Required	3	Deanship of Preparatory Year

	ENG 101	English Language Skills (1)	Required	4	Deanship of Preparatory Year
Level 2	GS 151	University life skills	Required	2	Deanship of Preparatory Year
	BIOL 101	Introduction to Biology	Required	3	Deanship of Preparatory Year
	MATH 101	Introduction to Mathematics	Required	3	Deanship of Preparatory Year
	GS 101	Islamic Studies Belief & Worship	Required	2	Deanship of Preparatory Year
Level 3	GS 152	Computer skills	Required	2	Deanship of Preparatory Year
	PHYS 101	Introduction to Physics	Required	3	Deanship of Preparatory Year
	ENG 102	English Language Skills (2)	Required	4	Deanship of Preparatory Year
Level 4	GS 102	Islamic Studies (Feature of Biography of the Prophet)	Required	2	General requirements department
	ANAT 251	Human Anatomy	Required	4	College of Medicine
	RAD 221	Radiation Physics	Required	3	DRT department
	RAD 231	Introduction to Medical Imaging	Required	2	DRT department
Level 5	GS 112	Arabic Language Skills (2)	Required	2	General requirements department
	PHSL 223	Human Physiology	Required	3	College of Medicine
	RAD 233	Patient Care & Safety in Medical Imaging	Required	2	DRT department
	FE1	Free Elective Course (1)	Elective	2	General requirements department
	RAD 234	Image Recording & Analysis	Required	2	DRT department

Level 6	RAD 222	Radiation Biology & Protection	Required	3	DRT department
	RAD 232	X-ray Imaging Equipment	Required	3	DRT department
	RAD 212	Sectional Anatomy	Required	2	DRT department
	RAD 242	Radiographic Procedures (1)	Required	3	DRT department
	RAD 233	Ethics & Law in Medical Imaging	Required	2	DRT department
Level 7	RAD 331	Digital Imaging & PACS System	Required	2	General requirements department
	RAD 341	Radiographic Procedures (2)	Required	3	DRT department
	RAD 351	Computed Tomography (1)	Required	2	DRT department
	RAD 353	Nuclear Medicine (1)	Required	2	DRT department
	RAD 311	Radiographic Pathology (1)	Required	2	DRT department
Level 8	GSE 1	University Elective (1)	Elective	2	General requirements department
	RAD 362	Ultrasound Imaging (1)	Required	2	DRT department
	PHT 376	Pharmacology & Contrast Media	Required	2	College of Pharmacy
	RAD 342	Radiographic Procedures (3)	Required	3	DRT department
	RAD 371	Clinical Practice (1)	Required	3	DRT department
Level 9	GS 103	Islamic Studies: (Human Right in Islam)	Required	2	General requirements department
	RAD 352	Computed Tomography (2)	Required	2	DRT department
	RAD 354	Nuclear Medicine (2)	Required	3	DRT department

	FE 2	Free Elective Course (2)	Elective	2	General requirements department
	RAD 372	Clinical practice 2	Required	4	DRT department
Level 10	RAD 481	Biostatistics & Research Methods	Required	3	DRT department
	GSE 2	University Elective (2)	Elective	2	General requirements department
	RAD 461	Magnetic Resonance Imaging (1)	Required	2	DRT department
	RAD 411	Radiographic Pathology (2)	Required	2	DRT department
	RAD 471	Clinical Practice (3)	Required	4	DRT department
Level 11	RAD 463	Ultrasound Imaging (2)	Required	3	DRT department
	RAD 462	Magnetic Resonance Imaging (2)	Required	3	DRT department
	GS 104	Islamic Studies: (Islamic Values & Morals)	Required	2	General requirements department
	RAD 492	Graduation Project	Required	3	DRT department
Level 12	RAD 472	Clinical Practice (4)	Required	4	DRT department
	RAD 412	Radiographic Imaging Interpretation	Required	3	DRT department
	RAD 431	Quality Management in Radiography	Required	2	DRT department
	RAD 1	Specialized Elective Course	Elective	3	DRT department

The module descriptions (Annex 29) covers the following aspects: Module number, module title, level/trimester, credit hours, language, learning outcomes/goals/skills of the module, content of the module, examination.

After the first year of the study program, students begin to have courses specialized for the “Diagnostic Radiology Technology” program. In the third and fourth trimester, students will be able to apply the knowledge and skills required to undertake safe and effective practice. In the third year, students will be able to perform competent and ethical imaging procedures within the context of legal and professional frameworks. In the fourth year, students will be able to foster independent critical thinking and leadership skills as well as exhibit the level of clinical competence and patient care.

During the internship year, students have to:

- Operate as entry level radiology technology specialists
- Apply research evidence
- Demonstrate the ability of professional judgement and decision making
- Utilize appropriate health and safety practice
- Demonstrate clinical reasoning in dealing with problems that may encounter in clinical practice.

The Bachelor study program “Diagnostic Radiology Technology” uses a variety of teaching and learning methods. These methods and strategies are aligned with the learning outcomes of programs and courses as well as with the assessment methods. Methods of teaching and learning include traditional as lecturers, individual and group work, case studies, practical activity in laboratories, group discussions, assignments, clinical simulations, field training, research project, etc. The “Diagnostic Radiology Technology” program pays particular attention to direct instruction in laboratory, classroom and hospital environment. In addition, blended learning methods are used such as blackboard system, which includes virtual classes, electronic exams, quizzes and discussion boards (SER 1.2.4).

The University initiated a “Digital transformation” which led to the launch of several platforms providing learning programs, E-library portals and administrative portals. The Blackboard platform offers for example innovative possibilities to learn like virtual classes, quizzes or virtual reality training as well as a way to communicate for students and staff. (SER 1.2.5)

Upon completion of all 12 trimesters of the “Diagnostic Radiology Technology” program, students must attain a mandatory internship year at a local or regional governmental or private hospital, which is not awarded any credits. The internship is one-year on a full-time basis (52 weeks, 5 days/week, 8 hours/day) after the successful completion of all modules of the “Diagnostic Radiology Technology” program. All interns and supervisors are guided by the policies and procedures contained in the “Field Experience Specification” (Annex 06). Furthermore, an academic coordinator and a clinical instructor work in tandem to ensure that each intern achieves the objectives of clinical training during the placement. The internship and clinical training unit is the college’s entity that is responsible to coordinate and facilitate the student training process between the College of Applied Medical Sciences and the affiliated health settings. During this year, students rotate in all radiology and imaging specialties: general x-ray, fluoroscopy, computed tomography, nuclear medicine, ultrasonography, magnetic resonance and other elective specialties such as intervention radiology, echocardiography or dual imaging techniques (SER 1.2.6).

During the clinical practice courses and the internship year, the students are expected fine-tuning their professional skills to:

- Develop the ability of professional judgements and evaluation of the information to support decision making,
- Explain the importance of safety measures built on the realization of risks,
- Operate the imaging equipment properly to undertake safe and effective practice as a diagnostic radiology technology specialist,
- Perform competent and ethically sound practice within the context of the legal and professional framework.

Concerning the aspect of internationality of the program curriculum, it was stated that the program of the course is aligned with the framework and contents of guidelines of the American Society for Radiologic Technologist and of the International Society for Radiographers and Radiologic Technologists. All specialized Diagnostic Radiology Technology courses are taught in English. (SER 1.2.8)

There are no special agreements with other universities regarding the completion or the sharing of the program. In case of a transfer from other diagnostic radiology technology department at Saudi universities: for required modules with different contents, the transfer will be done if 75% of the contents are matching and if the grade is not less than C. Controls are made before a student can be transferred from outside the University. (SER 1.2.9)

The College Research and Ethics Committee ensures that the research proposals from all students and staff are taken into consideration and eventually applied. The students learn basic research skills through essays and assignments but also through advanced courses. All these courses prepare the students for the realization of the graduation project at the end of the program. This project itself is only based on research study and provides the students with application skills of research principles. (SER 1.2.7)

Students' academic performance in each course in the program is assessed by different methods including mid-term exams and continuous assessment tasks as quizzes, projects, research critique, assignments, role play assessment, practical evaluation (case study, case presentation, OSCE), final practical and theoretical exams.

All data regarding the students' performance in examinations, assessment tasks, week due, proportion of total assessment method, criteria for evaluation of students' performance in assignments and different individual and group activities are discussed and represented in the first lecture in each course through the students' course guide.

The timing of the continuous assessment is defined at the first lecture of the trimester and is made of formative (60%) and summative (40%) assessments. The formative assessment includes test 1 and 2 and assignments/quizzes. The exams can happen inside and outside the class. Each theory or practical exam

takes 2 hours. Midterm exams take place in the middle of the trimester (week 7/8). The final exams take place at the end of the trimester (period of week 13 to 14). The repetition of exams is only allowed if an institutionally approved excuse is provided by the student within two weeks after missing the exam. According to the University regulations and program specification, students' final grade for each course is calculated based on the results of continuous exams (50 to 60 %) and final exams (40 %). Students should have attended at least 75 % of the contact hours in order to be admitted to the final examinations.

Students may complete a course in the following trimester based on the approval of the department. In that case, students receive a temporary grade "IC" (incomplete) which will later be changed into the obtained grade or into "F" in case of failure. There is no re-examination specific schedule; in some extraordinary cases, for instance, sickness or other emergency cases approved by the university system and regulations, re-examination is planned accordingly. Exams are repeated for students who were absent from exams and provided institutionally approved excuse within two weeks. This is applied for quizzes, midterm and final exams (SER 1.2.3).

Students' performance is evaluated according their Grade Point Average (GPA) and cumulated Grade Point Average (cGPA). The University uses a grading scale with 5.00 as the maximum grade:

Grade	%	Weight of Grade	Grade Code
Exceptional	95 – 100	5.00	A +
Excellent	90 – 94	4.75	A
Superior	85 – 89	4.50	B +
Very good	80 – 84	4.00	B
Above average	75 – 79	3.50	C+
Good	70 – 74	3.00	C
High pass	65 – 69	2.50	D +
pass	60 – 64	2.00	D
Fail	Less than 60	1.00	F
In-progress	--	--	IP
In-complete	--	--	IC
Denial	--	--	DN

The university Deanship of Student Affairs services has a department specialized in serving students with disabilities to provide their needs and overcome the difficulties they face. Disabled students who want to apply to the program must join a medical report describing their disability to their

application. The report is then evaluated by the Department Council whose recommendation is submitted to the college council for final decision. (SER 1.2.3)

According to the university, the committee of equalization of subjects at the DRT department includes the most senior staff concerned with the decision of transfer of credit points after acceptance of the transfer of students which follows rules and regulations of the university. (SER 1.5.3)

Regulations, in terms of timeline and formal guidelines for studies, concerning the compensations for students with disabilities and chronic illnesses you will find in Annex K.

2.2.4 Admission requirements

Admission policies and procedures along with the requirements are listed in Annex F. In order to be accepted to the study program, students must:

- complete Saudi higher school certificate (sciences branch) or equivalent
- be Saudi national. (Foreigners admitted under exceptional circumstances)
- not have attained a high school or equivalent for more than five years. (except if there are convincing reasons)
- have good conduct and be medically fit
- obtain the approval of his/her reference to the study if he/she works in any governmental or private entry (SER 1.5.1)

The total admission score of an applicant is calculated based on his or her scores in science section of the Saudi secondary school certificate (30 %), the cumulative score of the school certificate as a whole (40 %) and the ATC results (30 %).

2.3 Study conditions and quality assurance

2.3.1 Human resources

The teaching staff has 26 members detailed in the following table.

	Professor	Associate Professor	Assistant Professor	Lecturer	Total
Male Section	1	3	8	7	18
Female Section	0	0	6	2	8
Total Number (Male + Female)	0	3	14	9	26

The average workload per week for an instructor is 40 hours, 14 hours for an assistant professor, 12 hours for an associate professor and 10 hours for a full professor. 255 credit hours per trimester are required to complete the study program at full-time enrolment. There are currently no adjunct professors teaching in the study program. The University assesses that 100% of the courses are taught by assistant professors and associated professors, who are PhD holders.

Regarding the 145 students and the 26 teaching staff, the faculty-to-student ratio is 1:5,5 (SER 2.1.1).

A demonstrator must have at least a Bachelor's degree from one of the Saudi Arabian Universities or other recognized University with a very good average grade, lecturers must hold a Master's degree. Assistant/adjunct professors hold a doctorate degree. To be appointed to the level of associate professor, a doctorate degree, four years' experience in the faculty of a recognized university and a group of scientific research published in refereed journals are required. Being appointed to the level of a full professor requires a doctorate degree and at least eight years' experience in the faculty of a recognized university, including at least four years after promotion to the level of associate professor as well as scientific research published in refereed journals. The faculty's qualifications are documented in the CVs submitted by the University (Annex 12).

Workshops and seminars are organized yearly to develop the capabilities of the university staff. Moreover, the heads of the department complete an evaluation form for each staff member covering the academic performance,

attendance, activities inside and outside the college, collaboration with staff and students and complaints received from other members and students. (SER 2.1.3)

Administrative staff and technicians are distributed among the colleges in a ratio of 7 administrative/technician for each program. IT staff is managed and provided by the deanship of IT within the university. There are also several units designed to ensure the proper monitoring of the performance of other important parts of the program: for example, the academic advisory unit or the quality and data unit. (SER 2.2.1)

2.3.2 Facilities

The Applied Medical Sciences College has a research lab in both male and female sections.

The repartition of the rooms is as follows:

Male			Female		
Room no.	Assigned for	Capacity	Room no.	Assigned for	Capacity
C1-B16-Lab9	Classroom (level 7-8)	25 seats	121 A	Classroom (level 3-4)	45 seats
B16- C1-G1	Classroom (level 5-6)	20 seats	254	Classroom (level 3-4)	45 seats
B34-207	Classroom (level 3-4)	28 seats	B16c-(L12)	Virtual reality lab. *	10 seats
B16c-(L12)	Virtual reality lab.	10 seats	B16c-(1-13)	CT scan unit *	7 seats
B16c-(1-13)	CT scan unit	7 seats	B16c-(1-19)	Conventional radiography unit*	10 seats
B16c-(1-19)	Conventional radiography unit	10 seats	B16c-(1-2)	Digital fluoroscopy unit *	10 seats
B16c-(1-2)	Digital fluoroscopy unit	10 seats	B16c-(1-5)	Radiation physics lab*	10 seats
B16c-(1-5)	Radiation physics lab	10 seats	B16c-(1-21)	Ultrasound unit, Ultrasound simulation lab*	5 seats
B16c-(1-21)	Ultrasound unit, Ultrasound simulation lab	5 seats	B16c-(1-23)	NM simulation lab. *	5 seats
B16c-(1-23)	NM simulation lab.	5 seats	B16c-(1-7)	CT & MRI simulation lab. *	5 seats
B16c-(1-7)	CT & MRI simulation lab.	5 seats	B16c-(1-18)	Dark room*	5 seats
B16c-(1-18)	Dark room	5 seats			

The department only has 9 teaching skill-labs (fluoroscopy, conventional radiography, CT scanning, Ultrasound, radiation physics, CT scan simulation,

MRI simulation, MRI virtual reality and NM simulation). There is no specific lab for research, most of the research is carried out in collaboration with the departments of radiology at Ministry of Health hospitals. (SER 2.3.1)

The needed resources for teaching and research are submitted to the Head of the Department who is submitting it to the Deanship of Libraries. The University bookstore also sells books with low costs. The library is open from 8:00 am to 5:00 pm. Integrated automated library software has been acquired to allow on campus and off campus searches. Moreover, access has been provided to all universally known online databases. The e-library portal is accessible to all students and faculty members anytime which allows access to the Saudi Digital Library, to the Web of Science and many journals. (SER 2.3.2)

The students have the possibility to use simulation labs with training programs for CT, MRI and conventional radiography. An internet access is provided everywhere on site. The university also has its own official social media accounts to assure the communication with students, staff and community. (SER 2.3.3)

All researchers are eligible to fund and can apply through the DSR portal. Research groups are provided with financial support for the supply of required equipment and research materials. Moreover, a researcher who publishes his/her work in an acknowledged journal can obtain incentives and a reward of excellence. The Deanship of Scientific Research supports researchers with the University Scientific Excellence Prize, with research centers facilities and with the Taibah University Initiatives. (SER 2.3.5)

2.3.3 Quality assurance

The University follows the quality concept and the National Center for Academic Accreditation Assessment regulations (NCAAA). Represented by Deanship of Quality, the University has set up a quality assurance system (Ejadaa) to ensure that all colleges and programs perform all quality measures and rules provided by the NCAAA. All the tasks of control are supervised by the quality and data unit. The University also uses the national framework for qualification KSA in the formulation of the intended learning outcomes.

Periodic reviews of the opinions, workshops and training courses are used to develop the performance of the faculty. (SER 1.6.1)

The department uses the KPIs prepared by the college's quality unit analyzing the data and writing recommendations to improve the performance and quality of the program. The quality assurance measures are integrated through two cycles, a course report cycle and a program report cycle. All reports and student evaluations of the individual courses are then discussed in departmental board meetings and used to plan an overall improvement of the program. (SER 1.6.3)

There is a training and internship committee that assesses the students' performance and reports the problems facing the training and improvement plans required. There is also a unit surveying the students' opinions and satisfaction with the program annually. Other feedback is also obtained from stakeholders (Saudi Diagnostic Radiology, Saudi Commission for Health Specialties, hospitals, health centers). These feedbacks are then discussed in the department council and eventually added to the annual improvement plan. (SER 1.6.4)

The students are supposed to have between 8 and 13 credit hours per trimester and a maximum of 6 hours for summer courses. In some cases, a student can register for one more course over the maximum amount of credit hours allowed. A lower workload can also be approved in special cases. (SER 1.6.5)

The statistics on enrollment applications are as follows (SER 1.6.6):

Male Students:

Years	3 Years Ago 2018/2017	2 Years Ago 2019/2018	1 Year Ago 2020/2019	Current year 2021/2020
Student Categories	*UST			
1. Total cohort enrollment	*UST	28	28	27
2. Retained till year end		28	28	27
3. Withdrawn		0	1	1
4. Cohort graduated successfully		28	27	26
5.Total graduated successfully		28	27	26

* Unified scientific track

Female Students

Years	3 Years Ago 2018/2017	2 Years Ago 2019/2018	1 Year Ago 2020/2019	Current year 2021/2020
Student Categories	*UST			
1. Total cohort enrollment	*UST	25	22	21
2. Retained till year end		24	21	21
3. Withdrawn		1	1	0
4. Cohort graduated successfully		24	21	21
5.Total graduated successfully		24	21	21

An introduction week is organized at the beginning of every year at college level and students can also find all information online thanks to the electronic services system. The University has a counseling services unit including academic, psychological and social professional mentors offering individual and group counseling services. The Student Disability Center is there to serve the students with disabilities. (SER 1.6.7)

To assure the support of the students, each student is assigned to an academic advisor from the department staff. There are 4 office hours per week. The academic advisor is there to follow the performances of the students and arrange individual meetings to discuss social problems or difficulties and suggest solutions. An applied medical science club was established to encourage students to participate in voluntary work. (SER 1.6.8)

All students (male & female) share the same facilities in different timetables. A nursery is available on site for the care of infants and children. The students also get a special discount at the children's day care. The university counseling center is responsible for finding suitable solutions for students in special living situations. The health insurance also covers the infants and children of the students during all academic years. The students have access to the Medical Center of the Taibah University which provides all essential lab investigations needed for medical diagnosis and to the pharmacy which provides the medications. All these services are free of charge. (SER 1.6.9)

A barrier free environment is provided for students with disabilities but there are no general regulations for compensation of students with disabilities or chronic illnesses. (SER 1.6.10)

2.4 Information about the University

The Taibah University was founded in 2003 by merging the two branches of King Abdulaziz University and Imam Mohamed bin Saud Islamic University in Madinah. There were more than 60. 000 students enrolled in 2020. The University has 23 active colleges and 139 active departments and offers 120 undergraduate and graduate programs. From the 23 colleges, 15 are located on the main campus while the 8 others are in Yanbu, Al-Ola, Khaibar, Hnakiyya and Badr. The University has a total of 153 buildings with 208 student labs, 67 research labs, 17 research centers, 163 computer labs and 15 university libraries.

In order to improve the quality of education, the ministry of higher education has set up 8 strategic goals to align with the 2030 vision in higher education. The University has aligned its strategic planning with the national vision and already achieved projects, for example the NCAAA institutional accreditation and the digital transformation initiative. (SER 3.1.1)

The Department of Diagnostic Radiology Technology from the Faculty of Applied Medical Sciences was founded in 2005. There were 144 studying this program during the academic year 2020/2021. The Bachelor of Sciences in Diagnostic Radiology Technology is the only study program offered by the department. The college is aligning with the "Talibah university program

transformation initiative". Specifically, the program is currently under revision to ensure the alignment of the courses with criterias required by the Saudi Commission for Health Specialties (SCHS). (SER 3.2.1)

As part of a national initiative, led by the Saudi Arabian ministry education, all Saudi Arabian public universities are moving from a semester system (2 semesters per academic year) to a trimester (3 trimester per academic year). As demonstrated in the table below, the number of weeks dedicated for teaching per trimester are to be changed from 15 to 12. To compensate for the change in the number of weeks per trimester, the duration of a single lecture will be increased from 50 to 60 minutes, whilst the duration of practical sessions will be increased from 100 minutes to 120 minutes per session. It is however, important to highlight that this change has just been applied in the beginning of this academic year (28th of August 2022).

	Semester system	Trimester system
Number of semesters per year	2	3
Number of teaching weeks per semester	15	12
Number of weeks dedicated for exams	2	1
Overall duration of a semester (weeks)	17	13
Duration of a single lecture (min)	50	60
Duration of a single practical (min)	100	120

According to the University, this change will not affect any of the related accreditation criteria nor standards. Rather, the proposed changes will allow the transition from a semester system to a trimester system without impacting the program learning outcome, nor program's study plan, as program administrative teams have rearranged courses over 12 level rather than 8 levels for 4-year programs.

3 Expert reports

3.1 Preliminary remarks

The Accreditation Agency in Health and Social Sciences (hereinafter AHPGS) was commissioned by Taibah University (hereinafter the University) to accredit the study program “Diagnostic Radiology Technology” (Bachelor of Diagnostic Radiology Technology).

The on-site visit evaluation of the study program “Diagnostic Radiology Technology”, as well as the study programs “Nursing”, “Clinical Laboratory Sciences” and “Clinical Nutrition” offered at the Taibah University, was carried out on December 12 and 13, 2022 at Medina, Saudi Arabia.

The documents of the University, the feedback from the experts to the documents and the results of the discussions with the representatives of the University during the on-site visit serve as a foundation for the statements made in the Expert Report.

The following experts were appointed by the Accreditation Commission of AHPGS for the evaluation of the study program:

Prof. Dr. Dr. Anja Bosy-Westphal

Christian-Albrechts-University Kiel, Germany
Institute for Human Nutrition and Food Science
Head of the Department of Human Nutrition
Spheres of professional activity: clinical nutrition and dietetics

Dr. Mathias Maximilian Dilger

Albert-Ludwigs-University Freiburg, Germany
licensed physician and currently student of dentistry

Prof. Dr. Johannes Keogh

Fulda University of Applied Sciences, Germany
Professor of Nursing Sciences
Former program leader for Nursing at the Faculty of Nursing and Health at Fulda University of Applied Sciences
Research and science in Nursing, Nursing Education, Public Health, Preventive Care and Health Promotion

Qualification as nurse, midwife, community nurse and in psychiatric patient care

Prof. Dr. Gerd Mikus

Ruprecht-Karls-University of Heidelberg, Germany

Professor and former Deputy Medical Director of the Department of Clinical Pharmacology and Pharmacoepidemiology at the Ruprechts-Karls-University of Heidelberg

Deputy head of the Ethics Committee of the Landesärztekammer Baden-Württemberg, Member of the Expert Committee of controlled substances of the Federal Ministry of Health, Germany

Prof. Dr. Waldemar Zylka

Westphalian University, Campus Gelsenkirchen, Germany

Professor of Physics, Medical Engineering and Medical Physics at the Faculty of Physical Engineering

Dean of the Study Program "Medical Radiology Technology" (Bachelor of Science)

Founding member of the Westphalian Institute of Health

Member of the Germany Physical Society (DPG), Germany Society of Biomedical Engineering (DGBMT)

According to the Rules for the Accreditation of Study Programs and for System Accreditation (determined by the decision of the Accreditation Commission, of December 8, 2009 in the version of February 20, 2013, Drs. AR 20/2013), the task of the experts in the accreditation procedures is to evaluate the education concept of a specific study program as well as to estimate the possibility of its successful implementation. This concerns, in particular, qualification objectives of the study program, its conceptual integration into the system of education, the concept of the study program, feasibility of the content and scope of studies, the examination system, study-relevant collaborations, personnel, material and space resources, transparency and documentation, application of the results of quality assurance for further development of the study program (it is especially important to present the analyses and evaluation results of student workload, academic accomplishments and employment of graduates, which are to be documented and taken into account within the framework of continuous development of the study program), as

well as the provision of gender equality and equal opportunities.

The on-site visit of the experts is carried out in accordance with the “Standards and Guidelines for Quality Assurance in the European Higher Education Area” (ESG), established by the European Association for Quality Assurance in Higher Education (ENQA). After the announcement of the accreditation decision, the expert report will be published as a part of the Final Report.

3.2 Basic information about the study program

The main objective of the Bachelor study program “Diagnostic Radiology Technology” offered at the College of Applied Medical Sciences of Taibah University is to provide the community with scientifically and skillfully radiologists through a stimulating educational and research environment that contributes to the development and service of the community.

The study program requires the obtainment of 134 credit hours (CH) according to the internal credit hour system. One credit hour is equal to one contact hour of lectures, two hours of lab/practical hours and 3 hours of hospital training/field training hours per week. The program applies the University’s internal credit system. Thus, students’ performance is evaluated based on the results of a Grade Point Average (GPA) and the Cumulative Grade Point Average (cGPA). GPA is calculated by dividing the sum of the grade points (with 5 being the best achievable grade and 0 being the worst) received in all courses registered during one semester by the total credits received from all courses a student has completed since joining the program by the sum of the credit hours of these courses. According to the University regulations, students with a GPA of at least 2.00 are considered to have successfully completed the respective course. To successfully complete the whole program, students have to pass all obligatory examinations with the minimum grade of 2.00 cGPA score.

The total workload of the program constitutes of 6,885 hours, of which 2,745 hours are contact hours, 1,290 hours are training/internship hours and 2,850 are hours of independent study. It is a full-time study program with a regular duration of 4 years/12 trimesters plus one year of rotary internships. As part of a national initiative led by the Saudi Arabian ministry of education, all Saudi Arabian public universities had to move from a semester system to a trimester

system. Therefore, the number of weeks dedicated for teaching per trimester were changed from 15 to 12. To compensate for the change in the number of weeks per trimester, the duration of a single lecture was increased from 50 to 60 minutes, whilst the duration of practical sessions was increased from 100 minutes to 120 minutes per session. This change has been applied in the beginning of the academic year 2022.

The program curriculum consists of 52 modules, out of which 10 mandatory courses are taught in the preparatory year. 42 modules are specifically taught in the “Diagnostic Radiology Technology”.

Admission requirements of the program include a general school certificate or an equivalent document not later than 3 years as well as an Aptitude Test Certificate (ATC) administered by the National Center for Assessment in Higher Education. Upon completion of the study program, students are awarded with the academic title “Bachelor of Diagnostic Radiology Technology”.

The average students’ intake is 45 students per year. Admission takes place every September. The first batch of students has been admitted to the program in the academic year 2010/2011. Up to now, 172 students have graduated from the program. The main language of instruction is English. No tuition fees are charged to Saudi nationals. Students also receive monthly governmental stipends until they graduate.

3.3 Expert Report

The on-site visit was carried out on December 12 and 13, 2022, according to the previously agreed schedule. Representatives from the head office of AHPGS accompanied the expert group.

The expert group met on December 11, 2022 for preliminary talks prior to the on-site visit. They discussed the submitted application documents and the results of the written evaluation as well as questions that had been raised. Furthermore, they prepared the plan of the on-site visit at the University.

During the on-site visit, experts conducted discussions with the University management, representatives of the College of Applied Medical Sciences, the Chair, Vice Chair and the teaching staff of the program “Diagnostic Radiology

Technology” as well as with students currently studying in the program. Furthermore, they inspected the learning premises, such as lecture halls, seminar classrooms, library, and computer classes. Moreover, experts had the opportunity to see the equipment and the capacity of the laboratories.

The expert report is structured in compliance with the international accreditation criteria from AHPGS which are based on the “Standards and Guidelines for Quality Assurance in the European Higher Education Area” (ESG), established by the European Association for Quality Assurance in Higher Education (ENQA). The study program will be described and analyzed in a comprehensive manner below. The documents submitted by the University, the experts’ feedback to the documents, the observations made during the on-site visit, the results of discussions with the representatives of the University, and members of the Faculty of Applied Medical Sciences serve as the foundation for the statements made in the expert report.

3.3.1 Program aims and their implementation

Taibah University is one of the biggest universities in Medina region and aims to be an internationally recognized, comprehensive Saudi university dedicated to excellence in teaching, research and community service. To achieve this vision, the University has set up a strategic plan with the following directions:

- 1) Excellence in teaching and learning
- 2) Utilizing research & graduate studies for community development
- 3) Building active partnership with the community
- 4) Continuous improvement of administrative & financial management
- 5) Diversifying income resources
- 6) Creating an appealing & inclusive environment
- 7) Enhancing university ranking national, regionally & internationally

During the on-site visit, the experts inquire about the university's internationalization strategy. The university management reports that collaborations with France, the UK, and other countries are planned and partly already implemented. Furthermore, the Ministry of Education has also set up a "Human Capability Development" program, which will make it easier for international students to study in Saudi Arabia in the future. Among other things, a so-called "academic visa" is to be introduced to make the visa process

much easier for foreign students. Furthermore, full scholarships for international students are planned. Therefore, the admission regulations (e.g. being Saudi national) are going to change, which the experts positively acknowledge. The experts welcome these developments and are convinced that the commitment and engagement are given, as many of the faculty completed their master's degree and PhD programs abroad, which brings nationals in contact with other research strategies and a broader spectrum of experiences from which the University might profit. From the experts' point of view, the assessment of the Bachelor study program "Diagnostic Radiology Technology" according to international standards was also an important first step.

The experts further inquire regarding the research strategy at Taibah University as well as within the "Diagnostic Radiology Technology" program. The experts gained the impression that research as a topic seemed to be deemed very important for all faculty as well as students involved in the study program. The experts learned that there are already plans for the implementation of a master's program at the College of Applied Medical Sciences within the department of Diagnostic Radiology Technology to further expand the research activities. The experts take a positive note of the vision and strategic development plans. They recommend to setup an additional focus on therapeutic radiology technology. As these plans were not visible in the provided documents, the experts recommend to present the vision of the College and the department more actively, as this will make it more attractive for future students and could also open career paths for students seeking future positions such as managers or even teaching staff. Furthermore, the urgency for completing the University Hospital was mentioned by all stakeholders involved. From the experts' point of view, this would also open up future research possibilities, especially within the master's program. Therefore, the completion of the teaching hospital should be pushed. Lastly, in order to enhance the research skills of students in the "Diagnostic Radiology Technology" program, the experts recommend implementing a bachelor thesis as an internationally recognized final proof of academic competencies.

The Bachelor program “Diagnostic Radiology Technology” pursues specific qualification objectives. The program’s goal is to prepare competent diagnostic radiology technology specialists who are able to function effectively within a diverse health care environment as well as to participate in scientific research and community service. The graduates shall be able to work in radiography and fluoroscopy, in CT and MRI, in nuclear medicine as well as in angiography departments.

The learning objectives of the “Diagnostic Radiology Technology” program are based on standards within the national qualification framework for Saudi Arabia developed by the National Center for Academic Accreditation and Assessment (NCAAA). The five domains namely are knowledge; cognitive skills; interpersonal skills and responsibility; communication, information technology, numerical; and psychomotor. The experts confirm that the study program focuses on specific qualification objectives. These objectives cover professional and interdisciplinary aspects and particularly refer to the domain of academic competences, competences necessary for a qualified employment, skills of social commitment and personal development.

From the experts’ point of view, the requirements of this criterion are fulfilled.

3.3.2 Structure of the study program

The Bachelor study program “Diagnostic Radiology Technology” is a full-time study program with a regular duration of four years / 12 trimesters plus one year of rotary internships. The curriculum consists of 52 modules, out of which 10 are to be absolved in the preparatory year.

The first year of the study program aims to familiarize students with the academic environment and set the foundation for the further courses with topics like English language, university life skills, natural and related science. Also, students absolve courses like Arabic language and Islamic culture. These courses are shared between all students of Taibah University. In total, there are 18 courses within the “Diagnostic Radiology Technology” program which are shared with other colleges like the College of Medicine, College of Pharmacy and the College of Nursing. Furthermore, the teaching staff reports on collaborations on the research level regarding graduation projects, where the students have the chance to work in interdisciplinary teams. The experts

take positive note of the interdisciplinary collaboration between the health-related study programs at Taibah University. The experts see the planned teaching hospital also as a great opportunity to intensify interdisciplinary cooperation among students and teachers.

After the first year, students begin to have courses specialized for the “Diagnostic Radiology Technology” program. In the second year, students will be able to apply the knowledge and skills required to undertake safe and effective practice. In the third year, students will be able to perform competent and ethical imaging procedures within the context of legal and professional frameworks. In the fourth year, students will be able to foster independent critical thinking and leadership skills as well as exhibit the level of clinical competence and patient care.

Practical skills are gained during the clinical courses as well as the mandatory internship year which must be completed after the four years of study. During the internship the students work on a full-time basis (52 weeks, 5 days/week, 8 hours/day) at local or regional governmental and private hospitals. The experts appreciate that the internship students are supervised from both sides, the academic coordinator as well as the clinical instructor to ensure that the objective of the clinical training is met. All interns and supervisors are guided by the policies and procedures contained in the ‘internship logbook’. Furthermore, the ‘internship and clinical training unit’ is responsible to coordinate and facilitate the students’ training process between the College of Applied Medical Sciences and the affiliated hospitals. The University ensures that the internship is also regularly evaluated by the students, stakeholders as well as the clinical instructors. If there are any difficulties during the internship, the responsible staff within the “Diagnostic Radiology Technology” program are assisting the students in solving the problem or even shifting the internship place. This is also verified by the students, which the experts positively acknowledge.

Furthermore, the experts acknowledge the very detailed course files with its contents and aims, which allows a high level of transparency. In the experts’ opinion, the structure of the curriculum seems to make the workload manageable (*see also criterion ‘admission and feasibility’*).

From the experts' point of view, the requirements of this criterion are fulfilled.

3.3.3 Admission and Feasibility

The admission policies and procedures along with the requirements are properly documented and made publicly available. Admission requirements include:

- Saudi higher school certificate in sciences branch or equivalent (not older than five years),
- Saudi nationality (foreigners can be accepted under exceptional circumstances)
- Candidate should not have attained a high school or equivalent for more than five years.

As the first year of study comprises medical foundations as well as basic knowledge in university life and communication skills to compensate deficiencies from secondary school, the experts determine the admission procedure and requirements to be appropriate. They correspond to the standards of the study program.

The experts draw attention to the relatively high number of exams to be passed during the "Diagnostic Radiology Technology" program. The University states that the system of midterm and final exams is determined by the government. In order to prepare students for the level of difficulty and volume of exams, the type as well as the time of the different examinations is defined and communicated to the students transparently at the beginning of each course. The experts confirm that the University takes measures to guarantee the feasibility of the study program despite the high workload. The organization of the education process ensures the successful implementation of the study program.

On site, it became obvious that the teaching staff follows an "open-door-policy". In the first week of each year, students undergo an orientation which familiarizes them with available support services and where the colleges and departments are introduced. The experts positively highlight that senior students are also involved in organizing the orientation week and guiding the new students.

As another support mechanism, an academic advisor is responsible for a small number of students from the beginning of each semester. Students are supported through advisors, course coordinators or personal tutors with their registration process, selecting a study program, financial and personal issues and their performance during the semester. If the students have problems besides academic issue, a social support unit is installed at the University. The experts find the support services at the University to be exemplary and conducive to the health and success of the student body.

From the experts' point of view, the requirements of the criterion are fulfilled.

3.3.4 Examination system and transparency

The University uses a continuous assessment process to ensure the quality of education for its students. This is achieved by evaluating the performance of the students through a series of exams and quizzes that are scheduled during the academic trimesters. Students in the "Diagnostic Radiology Technology" program are not required to write a Bachelor thesis. Instead they have to conduct a research project called graduation project. Students will choose their supervisor based on the topic of the graduation project, which also needs to be approved by a committee. The experts positively highlight that specific workshops regarding the presentation and finalization of the graduation project are offered. The evaluation of the graduation project is done by presenting a poster or a dissertation. All of the graduation projects are presented during a research day at the University. Usually, there are two or three students responsible for one graduation project, which can also be done at hospitals or other suitable institutions. The experts understand that this is also the main difference compared to a Bachelor thesis, where the students have to apply simple research methods by their own. As already stated in *Criterion 1*, the expert recommend establishing a thesis instead of the graduation project as this is also internationally recognized.

Furthermore, the students are encouraged to write research proposals, papers and give presentations. The University presented a range of initiatives which should help the students to be interested in research and take part in writing and publishing papers, which the experts positively acknowledge.

In the experts' opinion, the study program includes a very high number of exams which causes a high workload not only for students but also for the teaching staff. The transparent information of examination methods and of the examination schedule at the beginning of each term makes the great number of assessments during and at the end of each trimester manageable. An examination can be repeated once. Students who cannot attend the test due to health issues or other unforeseen circumstances are allowed to take the test on another agreed day. If the examination is failed twice, students must redo the course in the following semester. Thus, the experts conclude that the examinations, although numerous, serve to determine whether the envisaged qualification objectives have been achieved or not and are focused on students' knowledge. The requirements to students' performance in examinations are regulated and published. The frequency of examinations, as well as their organizations, is appropriate.

During the round of talks, the University reports on an electronic exam system introduced at Taibah University as part of digital transformation 2019. This enabled the university to maintain its course of studies as far as possible even during the Corona pandemic. Through the digital transformation system all of the course information as well as academic support mechanisms, e.g. add and drop courses or academic advising are provided. The University also offered training programs for students and teachers to get familiar with e-learning, which the experts positively acknowledge.

From the experts' point of view, the requirements of this criterion are fulfilled.

3.3.5 Teaching staff and material equipment

The "Diagnostic Radiology Technology" program is carried out by one male professor, 3 male associate professors, 8 male and 6 female assistant professors as well as 7 male and 2 female lecturers. Considering the total of 145 currently enrolled students, the student-to-faculty ratio is 1:6. The experts positively acknowledge the good ratio.

Regarding the employment process, the qualification and experience of the teaching staff is closely evaluated prior to the appointment decision. Overall, the teaching and academic staff of the College of Applied Medical Sciences shows a very high level of commitment and potential for the execution as well

as further development of the study program they are responsible for. The expert group concludes that there is a strong corporate identity and positive group dynamics among the University and faculty administrations.

The experts find the number of human resources allocated to the program to be sufficient to carry out its functions. The teaching staff within the Bachelor program "Diagnostic Radiology Technology" is in possession of academic and technical credentials and experience adequate to their responsibilities. The University informs its employees about opportunities for personal and professional development in clear ways, and actively encourages their participation in workshops, training courses and conferences intended to further their ability which is confirmed during the talks with the staff on site. New teaching staff is thoroughly briefed about the program and their teaching responsibilities before they can start working. Student evaluate the performance of all teaching and other staff periodically.

On-site, the experts were shown around the College of Applied Medical Sciences' premises at the campus as well as the skills labs, where students within the "Diagnostic Radiology Technology" program gain their practical skills. The experts were satisfied with the quality of the laboratories and clinical areas used to train students in the Bachelor program "Diagnostic Radiology Technology". The laboratories consist of a virtual reality lab, a CT scan unit, a conventional radiography unit, a digital fluoroscopy unit, a radiation physics lab, an ultrasound unit, an ultrasound simulation lab, a nuclear medicine simulation lab, a CT & MRT simulation lab as well as a dark room. The laboratories are used by male and female students in separate practical sessions. According to the experts, the skills labs are equipped with all relevant devices and simulators. It was ascertained by the experts that the Bachelor study program "Diagnostic Radiology Technology" has ample available teaching facilities at its disposal. However, from the experts' point of view, an upgrade of the equipment at the campus, for example image modalities equipped with digital detectors and data processing is recommended. In addition to using the laboratories for the practical courses, the experts recommend using external cooperation opportunities even before the internship, on the one hand to get to know current equipment and on the other hand to evaluate the opportunities of the labor market.

The central library of the University is located on the main campus building. The library offers a collection of study and research material for “Diagnostic Radiology Technology” student. The total number of printed materials related to radiological sciences in the central library is 250 items. Electronic library is available for all students. The University deanship of library affairs manages the central library and its branches, as well as the electronic library. The college library opening periods is currently from 8:00 am to 6:00 pm.

The experts state that the learning resource materials and associated services are consistent with the requirements of the programs and the courses offered by them.

From the experts’ point of view, the requirements of this criterion are fulfilled.

3.3.6 Quality assurance

The University follows the quality concept of the National Center for Academic Accreditation and Assessment (NCAAA) from which Taibah University has recently got full accreditation for seven years until 2026.

According to the experts, Taibah University has a well-structured system of quality assurance spread across all its units. The University has established a quality assurance hierarchy which connects from the deanship to quality to all colleges and study programs. The quality assurance measures of the “Diagnostic Radiology Technology” program are divided in two cycles: The course reports are gathered by the course coordinators at the end of the trimester and submitted to the head of the department. The head of the department then reviews all reports and thereafter prepares the yearly program reports, taking all key performance indicators (KPIs) into consideration. All reports are discussed during the departmental board meeting along with the marks and grade distribution. The student evaluations of the individual courses are discussed to list the most important improvement and strength points. The results of this board meeting are then used to prepare an action plan for the next year and to improve the program. The experts conclude that University has a well-established, documented and published concept of quality assurance regarding the education process, teaching and research, which serves as the basis for the quality-oriented development and implementation of its study programs and, therefore, also for further

development of the “Diagnostic Radiology Technology” program. As the University states during the on-site visit, the student council meetings at the program level also plays an important role in the evaluation of the “Diagnostic Radiology Technology” program, which is confirmed by the students.

The results of the internal quality assurance management are applied to the continuous development of the study program. In doing so, the University takes into close consideration the quality evaluation results as well as the analyses of students’ workload, their academic accomplishments and feedback from graduates as well as other relevant stakeholders.

From the experts’ point of view, the requirements of this criterion are fulfilled.

3.3.7 Gender equality and equal opportunities

The College of Applied Medical Sciences, where the “Diagnostic Radiology Technology” program is located, has both female and male students and assures that it provides equal admission, education, examination and participation opportunities for both groups of students. The Taibah University demonstrates its commitment to the provision of equal opportunities for all students, within the cultural boundaries of the local society and shows openness for diversity and social developments. A nursery is available at the campus, where students get a special discount on children day care. The university counseling center helps students with special living situations. It was founded in 2012 and includes academic, psychological and social mentors and offers individual and group counseling service as well as therapeutic intervention. Furthermore, the medical center provides free health services to the students and their families.

The experts positively emphasize the handling of students with chronic illnesses and/or disabilities. Prior to admission, a medical examination will be conducted and an interview with the academic council and admission committee will be held to discuss whether the student can be admitted to the program. The University has implemented the student disability center. The accessibility of the campus was assured on site. It was well noted that the University was also able to immediately give examples of students benefiting of the support program for disabled or chronic diseased students.

From the experts' point of view, the requirements of this criterion are fulfilled.

3.4 Summary

The experts sum up that the overall impression of the Taibah University is very positive. The experts welcome the internationalization plans in KSA and at Taibah University. Research motivation at the university can also be further strengthened with the help of the development of master's degree programs and the completion of the teaching hospital. Digitalization at the university is working well and is positively noted by the experts. The University presents itself convincingly as an open-minded and dynamic institution with willingness to import new ideas and recommendations for further enhancement.

A number of additional favorable characteristics and achievements of the study program "Diagnostic Radiology Technology" were demonstrated by the management of the University, the representatives of the College of Applied Medical Sciences, those of the departments as well as of the study body, such as a strong commitment to quality assurance and a very well-functioning support mechanism system. Moreover, the experts highlight the thorough and comprehensive curriculum of the study program. Hence, the objectives meet the requirements of the current job market of the Kingdom of Saudi Arabia.

Based on the information from written documents and the results of the on-site visit, the experts conclude that the study program "Diagnostic Radiology Technology" offered at the Taibah University fulfills the above-described criteria. Hence, the experts recommend that the Accreditation Commission of AHPGS makes a positive decision regarding the accreditation of the study program.

For the continuous development of the study program, the experts have outlined the following recommendations:

- The University should present the vision of the College of Applied Medical Sciences and the Department of Diagnostic Radiology Technology regarding implementing a Master study program more actively.

- Regarding the Master study program, a focus on therapeutic radiology technology could be set.
- The completion of the teaching hospital should be pushed and the resulting opportunity to intensify interdisciplinary cooperation among students and teachers should be utilized.
- A bachelor thesis as an internationally recognized final proof of individual academic competencies should be implemented.
- An upgrade of the equipment at the campus, for example digital equipment in all diagnostic imaging modalities is recommended. In addition to using the laboratories on campus for the practical courses, external cooperation opportunities should be empowered even before the internship, on the one hand to get acquainted with state-of-the-art equipment and on the other hand to evaluate the opportunities and status of the labor market.

4 Decision of the accreditation commission

Decision of the Accreditation Commission of February 16, 2023

This resolution of the Accreditation Commission of the AHPGS is based on the application, as well as the expert review and the on-site visit covered in the expert report.

The on-site visit of Taibah University took place on December 12 and 13, 2022 according to the previously agreed-upon schedule.

The accreditation decision is based on the "Accreditation Criteria for International Program Accreditation" which have been developed in close accordance with the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG), established by the European Association for Quality Assurance in Higher Education (ENQA).

The Accreditation Commission of the AHPGS discussed the procedural documents and the vote of the expert group.

The regulated study period in the program "Diagnostic Radiology Technology" is four years / twelve trimesters + one-year internship (not credited). The study program requires the obtainment 134 credit hours (CH) according to the internal credit hours system. The study program consists of 52 courses out of which 10 courses are absolved during the unified scientific track and 42 are study program specific. The language of instruction is English. The bachelor study program "Diagnostic Radiology Technology" is completed with awarding of the academic degree "Bachelor of Diagnostic Radiology Technology". Admission takes place every fall semester. The first batch of students was admitted to the study program in the academic year 2010/2011.

The Accreditation Commission of the AHPGS considers that all Accreditation Criteria are fulfilled and adopts the following decision:

The study program "Diagnostic Radiology Technology" is accredited for the duration of five years, until September 30, 2028.

For further development and enhancement of the study program, as well as of the University as a whole, the Accreditation Commission of the AHPGS supports the recommendations articulated in the expert report. Additionally,

the Accreditation Commission recommends to translate the internal credit hour system into the European Credit Transfer System (ECTS) and attach it as an appendix to the diploma to ensure international compatibility.