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College: Science
Department: Mathematics
Program: B.Sc. in Mathematics
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Executive Summary:

This report provides a comprehensive and realistic self-study of the Faculty of Science at the University of Tabuk according to the requirements of the National Centre for Academic Accreditation and Assessment (NCAAA) using its model. The report clarifies, with complete transparency, the mission of the College of Science, its strategic objectives, quality standards, strengths, weaknesses, and improvement steps that the College of Science plans to follow. A brief introduction explaining all the information and notes used in preparing the report.

Abbreviations:

UT	Tabuk University
FSUT	Faculty of science University of Tabuk
SSR	Self-study report
ASIIN	The Accreditation Agency for Study Programmes in Engineering, Informatics, Natural Sciences and Mathematics
NCAAA	The National Commission for Academic Accreditation & Assessment
KPI	A key performance indicator
PLO	Program Learning outcomes
MyUT	the academic gate of UT

1. Program Profile

1.1 Program Mission

Providing mathematical and computing skills to graduates in an environment that encourages scientific research and community service

1.2 Program Goals

1-Create a curriculum that promotes critical thinking, analysis, and the application of mathematical programs

2-Raise students' academic achievement.

3-Strengthening and improving faculty and staff members' abilities

4-Encourage participation in research programs and specialized scientific conferences.

5- Encourage effective community cooperation and communication.

6- Providing an efficient administrative and organizational environment.

1.3 Summary of Program History

Program starting date and the reasons for its establishment.

Campus Branch/Location	Approval By	Date
Main Campus	Ministry of Education	1426 H
Umluj	Ministry of Education	Male1435H & Female1430 H

The Department of Mathematics was established under the decision of the Board of Higher Education on 15/37/1426 H, in order to meet the needs of the local community in the Tabuk region of qualified mathematicians. At that time, the Mathematics Department included the statistics program as a part of it. In 1433 H, a separate department of statistics was founded independently of the mathematics department. In 1431-1432 H the Mathematics Department offered a postgraduate program leading to the master's degree in mathematics. In 1435 H, the Mathematics program was accredited by the ASIIN accreditation commission from 28/03/2014 to 30/09/2019.

1.4 Program's Internal and External Environmental Changes

A brief description of the most important internal and external program's environmental changes (recent or expected to occur), and the program's response to them.

Table 0.1: Program's internal environmental changes:

Internal environmental changes	Implication on the program	Program response
▪ UT has got complete Institutional Accreditation.	▪ Institutional accreditation helps in improving all processes inside the university.	▪ It gives a chance to the program to apply for academic accreditation.

▪ After accreditation of UT, the higher administration encourages all programs at UT to apply for program accreditation.	▪ Working on program accreditation helps in extensive review of all activities of the program and its constituents.	▪ Working hard on assuring the quality of the Mathematical Program and completing its resources, facilities and equipment.
▪ FSUT has implemented its strategic plan for five years starting in 2018, which is consistent with the second strategic plan of UT.	▪ A comprehensive study was performed for the Mathematical Program internal and external environment before implementation of the strategic plan. It aims to establish a futuristic vision for development that is consistent with Saudi Vision 2030.	▪ All staff in FSUT are working very hard to achieve the strategic plan. The plan is monitored regularly every three months and reports of achievement were submitted to the strategic plan committee in UT.
▪ The COVID-19 pandemic.	▪ The teaching and assessment methods of courses were modified to be suitable for online distance teaching and assessment.	▪ Online content was provided where each instructor has been given the chance to use different resources.
▪ A plan was established to conduct a standardized test that is designed for all science programs at the faculty. However, it was postponed due to COVID-19 infection and curfew started on 9 March 2020	▪ Progress test helps in measuring all learning outcomes of the program. It helps in comparing the results between all mathematics programs in Saudi Arabia. The department is in preparation of a standard test for mathematics students.	
▪ The honouring of faculty members active in research.	▪ Introduction of an honour certificate for best performance helps in enhancing a supportive environment for all members to do their best.	▪ More efforts should be made by the higher administration of FSUT to insure the credibility and continuity of the prizes.
▪ FSUT has established an advisory board recently.	▪ The program has advisory boards that would help the department to make the decisions.	▪ Planning to hold advisory committee meetings in the coming periods.

Table 0.2: Program's external environmental changes:

Significant changes external to the program	Implication on the program	Program response
▪ Curfew to control COVID-19 virus infection.	▪ The program was converted to distant learning by the Blackboard program.	▪ Planning in advance for any future changes is important

		for any change that may suspend teaching. ▪ New online content should be revised carefully to overcome any errors during sudden changes.
▪ NEOM project in Tabuk region. It is a Saudi project for a smart tourist located in the far north-west of Saudi Arabia. It includes marine land located within the Egyptian and Jordanian borders. ▪ Red Sea project: Crown Prince Mohammed Bin Salman launched the Red Sea Project in July 2017 as a luxury and sustainable international tourist destination on the west coast of the Saudi Kingdom.	▪ The project will attract more researchers.	▪ The departments encourage to study the phenomenon surrounding those areas using mathematical tools

1.5 A List of the Program Achievements, Awards, and Significant Accomplishment

Student's Name: Abdullah Suleiman Al-Atawi

Conference title: The fourth scientific conference and female students of higher education in the eastern region.

Award: Second place in the Kingdom in the field of basic sciences and engineering.

Prize amount: 12,000 Saudi riyals

Supervisor's name: Dr. Abdel Halim Obaid

Research title,: Fai's new method for solving its myth on the nanoscale

1.6 Program's Accreditation Status

A summary description of the program's accreditation status including the outcomes of any previous program review.

Attach *a copy of the previous external review or accreditation visit report (if any) and the program's response to its recommendations.*

The program acquired the ASIIN accreditation previously from 28/03/2014 to 30/09/2019.

1.7 Total Credit Hours: (132 hrs)

1.8 Preparatory or Foundation Program (if any)

A summary description of preparatory or foundation programs (if any) including (its management, relationship with academic program learning outcomes, how many academic credits are granted into the program and included in the GPA).

The first year of the program consists of 33 credit hours, previously the management of the first year curriculum was under the responsibility of the head of the preparatory year program, but now the situation is different where the first year is directly managed by the HOD of mathematics department, all the courses taught to first year students are directly monitored by the Mathematics departments:

1. English Language Unit:
   - English Language (1) (5 credit hours).
   - English Language (2) (5 credit hours).
2. Faculty of Education and Arts:
   - Communication Skills (2 credit hours).
   - Learning, Thinking and Searching Skills (3 credit hours).
3. Faculty of Science:
   - Mathematics (1) (3 credit hours).
   - Mathematics (2) (3 credit hours).
   - General Physics (3 credit hours).
   - General Biology (3 credit hours).
   - General Chemistry (3 credit hours).
4. Faculty of Computers & Information Technology:
   - Computer Skills (3 credit hours).

1.9 Major Tracks/Pathways (if any)

Major Tracks/Pathways	Credit Hours *(for each track)*
NA	

1.10 Intermediate Exit Points/Awarded Degree (if any)

Intermediate Exit Points/Awarded Degree	Credit Hours
NA	

1.11 Branches Offering the Program:

Umluj (Main and Female)

1.12 Program Statistical Data

1.12.1

Table 0.3: Main campus: Students Enrolment

Number of Students		Two Years Ago	Last Year	Current Year	Expected Next Year	Expected After two years
Proposed Number of Enrolled Students العدد المقترح للطلبة المسجلين	Male	110	110	120	120	120
	Female	140	140	150	150	150
	Total	250	250	270	270	270
Number of Enrolled Students عدد الطلاب المسجلين	Male	95	91	98	102	115
	Female	138	156	139	145	160
	Total	233	247	237	247	275
Number of Enrolled International Students عدد الطلاب الدوليين المسجلين	Male	0	0	2	5	7
	Female	0	0	9	10	12
	Total	0	0	11	15	19
Average Class Size متوسط حجم الفصل	Male	40	35	30	35	35
	Female	45	45	40	45	45
	Average	42.5	40	35	40	40
Ratio of Students to Teaching Staff نسبة الطلاب لهيئة التدريس	Male	10 : 1	9 : 1	9 : 1	8 : 1	7 : 1
	Female	27 : 1	26 : 1	19 : 1	20 : 1	17 : 1
	Overall	17 : 1	15 : 1	13 : 1	13 : 1	10 : 1
Comments:						
At the main campus the trend of the enrollment data shows that the total number of enrolled students range from 230 to 280 with an average of 239, which is close to the expected average of 256. The average number of female students is 1.5 more than male students. Although the number of faculty at the female section is quite low compared to male section, the faculty members at the male section also take teaching load at the female section, as a result the overall ratio of students to teaching staff is 1:13 which is quite satisfactory. The average number of students in a class is about 39 which is also appropriate.						

Table 0.4: Umluj campus: Students Enrolment

Number of Students		Two Years Ago	Last Year	Current Year	Expected Next Year	Expected After two years
Proposed Number of Enrolled Students العدد المقترح للطلبة المسجلين	Male	50	50	60	60	70
	Female	100	100	100	100	110
	Total	150	160	160	160	180
Number of Enrolled Students عدد الطلاب المسجلين	Male	56	49	63	70	50
	Female	62	92	86	100	60
	Total	118	141	149	170	110

Number of Enrolled International Students عدد الطلاب الدوليين المسجلين	Male	0	0	0	0	0
	Female	0	0	0	0	0
	Total	0	0	0	0	0
Average Class Size متوسط حجم الفصل	Male	50	51	49	50	40
	Female	49	39	38	40	45
	Total	99	90	87	90	85
Ratio of Students to Teaching Staff نسبة الطلاب لهيئة التدريس	Male	1:64	1:42	1:41	1:48	1:50
	Female	1:36	1:36	1:38	1:39	1:44
	Total	1:40	1:38	1:39	1:43	1:47

Comments:

At Umluj campus the trend of the enrollment data shows that the total number of enrolled students range from 118 to149, with an average of 136, which is close to the expected average 157 . Also we notice that the average number of female students 1.4 more than male students, male students are less interested in science and prefer to join engineering or Business programs. The current ratio of students to faculty members at Umluj campus is about 1:39, which is an alarming ratio, also the average number of students in a class over the last three years is 92, the data indicates a huge shortage in faculty members at Umluj campus. Also the mathematics program has about 13 (5 males and 8 females) scholarship students that are studying overseas that are expected to join the program during the coming 4 years. Which will be enough to fill in the apparent shortage in the number of faculty members at Umluj campus.

- *Insert a separate table for the main campus and each branch.*

1.12.2

Table 0.5: Classification of Students Based on Mode of Study

Mode of Study		Number of Students						
		Saudi			Non-Saudi			Total
		Male	Female	Total	Male	Female	Total	
On Campus	Main campus	273	528	801	2	9	11	812
	Umluj campus	246	316	562	0	0	0	562
Distance Education	Main campus	-	-	-	-	-	-	-
	Umluj campus	-	-	-	-	-	-	-

Comments:

Due to the current Corona pandemic, the mode of study has shifted to E-learning through blackboard.

1.12.3

Table 0.6: Main campus Graduation Rate

Graduates		Three Years Ago	Two Years Ago	Last Year
Number of Graduates				
Diploma/ Associate Diploma (Exit Point)		NA	NA	NA
Bachelor	Main campus	27%	28%	52%
	Umluj campus	-	50%	55%
Total number of graduates		115	128	243
Graduates' Employment				
Number of Employed Graduates		-	64	56

Ratio of Employed to Total Graduates		-	5%	23%

Comments:

The trend of the completion rate shows a positive progression over the last three years. Recently the FSUT has established a library and a study room provided with all the needed facilities, and more attention has been paid to extracurricular activities. Also the teaching staff has adopted new modern learning outcomes assessment strategies by connecting the learning outcomes of the courses directly with the exam questions through a well-designed matrix that guarantees an even distribution of the exam questions over all course sections as well as over all the learning domains specified by the NCAAA.

The number of employed graduates last year was 56 which accounts for (23)% of the total number of graduates. The program needs to initiate a variety of professional development programs to help graduate students in their future career.

1.12.4

Table 0.7: Main campus: Apparent Completion /Graduation Rate

Students		Graduation Year			
		Three Years Ago	Two Years Ago	Past Year	Current Year
Total Cohort Enrollment إجمالي المجموعة النموذجية للتسجيل	Male	92	95	91	98
	Female	131	138	156	139
	Total	223	233	247	237
Number of Cohort Students Graduated in the Specified Time عدد المتخرجين في الوقت المحدد	Male	11	12	23	0
	Female	29	42	54	0
	Total	40	54	77	0
Apparent Completion Rate معدل الإكمال الظاهري	Male	12%	13%	26%	-----
	Female	22%	31%	34%	----
	Total	18%	24%	30%	-----

Comments:

At the main campus, although the completion rate is low, especially at male campus but the trend has during the last three years shows a 12% increment from 18% to 30%, which is quite promising, the mathematics program must have action plans in place to keep such a rate of progression over the coming year.

Table 0.8: Umluj campus: Apparent Completion /Graduation Rate

Students		Graduation Year			
		Three Years Ago	Two Years Ago	Past Year	Current Year
Total Cohort Enrollment إجمالي المجموعة النموذجية للتسجيل	Male	54	49	48	25
	Female	50	54	53	24
	Total	104	93	101	49
Number of Cohort Students	Male	48	37	12	0
	Female	51	64	21	0
	Total	99	101	33	0

Graduated in the Specified Time عدد المتخرجين في الوقت المحدد					
Apparent Completion Rate معدل الإكمال الظاهري	Male	0%	28%	67%	-----
	Female	26%	21%	23%	----
	Total	14%	25%	38%	-----

Comments:

At Umluj campus the average apparent completion rate is about 23% for female students and 48% for male students. The past year completion rate at male section is 67% and it was 28% two years ago the observed jump in the graduation rate because the number of male students that joined the program last year was 49 students while the number of graduates that year was 33, while the number of female students that joined the program was 92 students and the graduates were 21 female students.

1.12.5

Table 0.9: Main campus: Number of Teaching Staff

Teaching Staff		Saudi			Non-Saudi			Average Teaching Load For All Teaching Staff		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Faculty Members	Professor	0	0	0	1	0	1	10 H	10 H	
	Associate Prof.	0	2	2	5	0	5	12 H	12 H	
	Assistant Prof.	4	5	9	15	4	19	14 H	14 H	
	Total	4	7	11	21	4	25			
Other Teaching Staff	Lecturer	1	5	5	0	0	0	16 H	16 H	
	Demonstrator	6	7	13	0	0	0	16 H	16 H	
	Teaching Assistant	1	6	7	0	0	0	17 H	17 H	
	Total	8	18	26	0	0	0			

Comments:

At the main campus the current total number of teaching staff is 62which is quite adequate. Where the overall ratio of students to teaching staff is 1:13. The number of PhD holders at the female section is quite low compared to the male section, one of the reasons is the shortage in the available number of female PhD holders. The average teaching load is quite adequate also at both male and female sections. Faculty members at male section do take teaching loads from the female section. Also the mathematics program has about 15 (5 males and 7 females) scholarship students that are studying overseas that are expected to join the program during the coming 4 years. Which will be enough to fill in the apparent shortage in the number of faculty members at Umluj campus.

Table 0.10: Umluj campus: Number of Teaching Staff

Teaching Staff		Saudi			Non-Saudi			Average Teaching Load For All Teaching Staff		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Faculty Members	Professor	0	0	0	1	0	1		-	
	Associate Prof.	0	0	0	0	1	1	18	18	
	Assistant Prof.	0	0	0	4	3	7	18	18	
	Total	0	0	0	5	4	9	18	18	

Other Teaching Staff	Lecturer	0	1			1	2		16	
	Demonstrator								-	
	Teaching Assistant	1	3			0	8	19	16	
	Total	1	4	0	0	1	6	19	16	

Comments:

At the Umluj campus the total number of teaching staff is 15, the current overall ratio of students to teaching staff is 1:39, The data indicates a shortage in faculty members at the Umluj campus. Also the mathematics program has about 15 (5 males and 7 females) scholarship students that are studying overseas that are expected to join the program during the coming 4 years. Which will be enough to fill in the apparent shortage in the number of faculty members at Umluj campus. The average teaching load is also quite high and that will negatively affect the faculty members performance not only in teaching but also in research production, community services and professional development.

* Insert a separate table for the main campus and each branch
** **Attach** a detailed list for teaching staff including the following (name, gender, nationality, degree, mode of study (on-campus, distance education), academic rank, general and specific specialty, institution graduated from, list of current courses taught in the current academic year)

1.12.6

Table 0.11: Main campus: Classification of Teaching Staff According to Mode of Study

Teaching Staff	On-Campus			Distance Education		
	Full-time	Part-time		Full-time	Part-time	
		Number	FTE (full-time equivalent)		Number	FTE (full-time equivalent)
Male	33	-	-	-	-	-
Female	29	-	-	-	-	-
Total	62	-	-	-	-	-

Comments:

Due to the current Corona pandemic, the mode of study has shifted to E-learning through blackboard.

Table 0.12: Umluj campus: Classification of Teaching Staff According to Mode of Study

Teaching Staff	On-Campus			Distance Education		
	Full-time	Part-time		Full-time	Part-time	
		Number	FTE (full-time equivalent)		Number	FTE (full-time equivalent)
Male	6	-	-	-	-	-
Female	10/9	-	-	-	-	-
Total	16/15	-	-	-	-	-

Comments:

Due to the current Corona pandemic, the mode of study has shifted to E-learning through blackboard.

1.12.7 Overall Assessment of Program Statistical Data:

Strengths:

1. 58% of the teaching staff are PhD holders.
2. The Number of teaching staff at the main campus male section is satisfactory.
3. The teaching staff at the main campus is adequate.

Areas for Improvement:

1. There is a shortage in the number of teaching staff at Umluj campus, more faculty members need to be recruited for Umluj campus.
2. There is a shortage in the number of teaching staff at the female section in the main campus, so the program should consider hiring more female teaching staff.
3. The class size at Umluj campus is quite big, so the mathematics program should consider reducing the number of students in all the sections.
4. The mathematics program should have action plans in place to keep graduation rate in continual progression over the coming years, by enhancing all the factors that control the graduation rates such as dismissal and withdrawal rates, the program also should provide low performance students with special support through extra classes or any other means.

Priorities for Improvement:

1. There is a shortage in the number of teaching staff at Umluj campus, more faculty members need to be recruited for Umluj campus.
2. The class size at Umluj campus is quite big, so the mathematics program should consider reducing the number of students in all the sections.
3. There is a shortage in the number of teaching staff at the female section in the main campus, so the program should consider hiring more female teaching staff.
4. The mathematics program should have action plans in place to keep the graduation rate in continual progression over the coming years.

2. program Self-study

2.1 Self-Study Process

A brief description of procedures followed and administrative arrangements for the self-study, including the structure of self-study committees.

Attach *a report on the self-study process (including membership and terms of reference for committees, sub-committees, working teams, and process for the preparation of each standard).*

The accreditation of the Mathematics Program is not the ultimate goal, but is a means of ensuring that the program is working hard in graduating highly quality graduates with excellent skills in the labour market. In order to apply for academic accreditation of Mathematics Program:

1. The UT has planned in its second strategic plan to get program accreditation of all UT Programs while the UT vice-rectorate for quality and development is in charge of this target.

2. The Vice-Rectorate for Development and Quality established a guideline for all programs that are requested to start the project of getting accreditation either national or international.

3. Vice–Rectorate of Development and Quality provided all possible help in the first stage of preparation by implementing a form for measurement of the fulfilment of eligibility requirements for programs accreditation, which is submitted to all programs in UT.

4. The Dean of the college assembled the committees for accreditation, following the instructions produced by Deanship of Development and Quality.

   a. **Quality Assurance Committee:** Provided that the committee performs the following tasks:
      - Collection of evidence and proofs for the first substandard self-study of the Mathematics Program under the title "**Mission and Goals**".
      - Collection of evidence and proofs for the second substandard self-study of Mathematics Program under the title "**Program Management and Quality Assurance**".
      - Writing the first and second standards with the performance of indicators analysis.

   b. Teaching and Learning Committee: Provided that the committee performs the following tasks:
      - Collection of evidence and proofs for the third substandard self-study of Mathematics Program under the title "**Teaching and Learning**".
      - Collection of evidence and proofs for the fourth substandard self-study of Mathematics Program under the title "**students**".
      - Collection of evidence and proofs for the fifth substandard self-study of Mathematics Program under the title "**Teaching Staff**".
      - Writing the third, fourth and fifth standards with environmental analysis and defining performance indicators for the program and reference comparisons.

   c. Infrastructure Committee: Provided that the committee performs the following tasks:
      - Collection of evidence and proofs for the sixth standard of the Mathematics Program's self-study under the heading "Learning Resources, Facilities, And Equipment".
      - Writing the Sixth Standard while providing the necessary data and evidence.

   d. SSRP drafting committee: Provided that the committee performs the following tasks:
      - Collection of all six standards and their evidence from the other committees.
      - Writing and finalizing the SSRP.

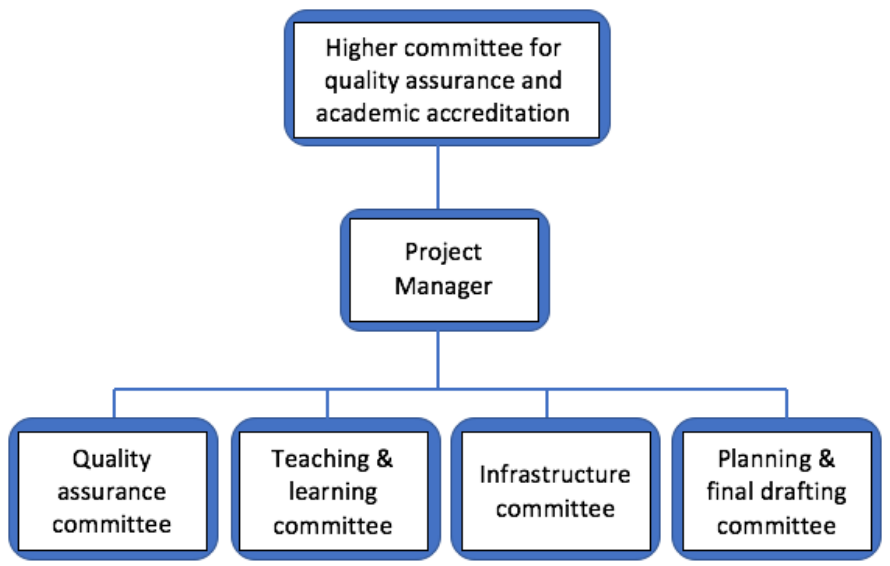


Figure 0.1: Organization chart for Mathematics Program accreditation.

5. The Science faculty's members worked hard in collecting all data requested by the Vice–Rectorate of Development and Quality to fulfill the requirements of accreditation. All data was submitted to the Vice–Rectorate of Development and Quality for investigation.

6. Mathematics Program was one of the programs that were chosen for application of accreditation in the National Centre for Evaluation and Academic Accreditation.

7. The Vice–Rectorate of Development and Quality provided the program with all needed guides for preparation of accreditation such as the guide for accreditation of academic programs and the eight weeks action plan for working on accreditation.

8. The strengths and weaknesses were properly identified for preparation of a shortlist of priorities for improvement.

2.2 Key Performance Indicators (KPIs) and Benchmarking

2.2.1 Methodology of Identifying Program Internal and External Benchmarking

Including benchmarking partners and selection criteria/reasons.

NCAAA KPI Reference Number: KPI-P-01

Percentage of achieved indicators for program operational plan objectives.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Mathematics Program	80%	85%	75%	87%	75%

NCAAA KPI Reference Number: KPI-P-01b

The average rate of stakeholder's awareness of the mission statement and objectives.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmarking
Main	92%	90%	88%	95%	NA
Umluj	93%	90%	90%	95%	NA

NCAAA KPI Reference Number: KPI-P-02

Average of overall rating of final year students for the quality of learning experience in the program.

campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Mathematics program	3.75	3.8	3.6	4	3.735

NCAAA KPI Reference Number: KPI-P-03

Students' overall rating of the quality of their courses.

campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	3.9	4	3.9	4.2	3.8
Umluj	4.3	4	4	4.4	

NCAAA KPI Reference Number: KPI-P-04

Proportion of students entering undergraduate programs who complete those programs in the minimum time.

Campus	Actual Benchmark			Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
	Male	Female	Average				
Main	23%	52%	38%	40%	28%	40%	24.86%
Umluj	41%	50%	46%	50%	40%	50%	

NCAAA KPI Reference Number: KPI-P-05

Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year

Campus	Actual Benchmark			Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
	Male	Female	Average				
Main	60%	95%	78%	80%	75%	80%	57.85%
Umluj	81.1%	86.2%	84%	90%	82%	90%	

NCAAA KPI Reference Number: KPI-P-07-a

Percentage of graduates from the program who within a year of graduation were employed

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	6%	5%	4.7%	8%	11%
Umluj	5%	5%	4.7%	7%	

NCAAA KPI Reference Number: KPI-P-07-b

Number of graduates from the program who within a year of graduation were enrolled in postgraduate programs.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	2.5%	3%	1.9%	3%	11%
Umluj	3%	3%	0%	3%	

NCAAA KPI Reference Number: KPI-P-08

Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory or clinical session).

Campus	Actual Benchmark			Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
	Male	Female	Average				

Main	35	45	40	40	43	35	Male	28
Umluj	50	52	51	45	50	45	Female	27

NCAAA KPI Reference Number: KPI-P-09

Average of overall rating of employers for the proficiency of the program graduates in an annual survey.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	62%	50%	NA	65%	NA
Umluj	NA	NA	NA	50%	NA

NCAAA KPI Reference Number: KPI-P-10

Average student's satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, ...) on a five point scale in an annual survey.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	3.1	3.5	3	3.5	3.5
Umluj	1.5	3.5	1	3.5	

NCAAA KPI Reference Number: KPI-P-11

Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	16:1	15:1	17:1	14:1	13:1
Umluj	39:1	35:1	38:1	35:1	

NCAAA KPI Reference Number: KPI-P-12

Percentage of teaching staff distribution based on:

a. Gender.
b. Branches.
c. Academic Ranking.

Actual Benchmark		Target Benchmark		Internal Benchmark		New Target Benchmark		External Benchmark
Main	Umluj	Main	Umluj	Main	Umluj	Main	Umluj	
M: 58.2% F:41.8% Prof.: 3.6% Assoc.:14.5% Assis.:52.7% Lect.:3.6% Demo.: 25.4%	M: 42.9% F:57.1% Prof.: 7.1% Assoc.:7.1% Assis.:50% Lect.:7.1% Demo.:28.5%	M: 50% F:50% Prof.: 5% Assoc.:20% Assis.:50% Lect.:15% Demo.: 10%	M: 50% F:50% Prof.: 10% Assoc.:10% Assis.:60% Lect.:10% Demo.: 10%	M: 64.7% F:35.3% Prof.: 2% Assoc.:17.6% Assis.:53.4% Lect.:3.6% Demo.: 25.4%	M: 42.9% F:57.1% Prof.: 7.1% Assoc.:7.1% Assis.:50% Lect.:7.1% Demo.: 28.5%	M: 50% F:50% Prof.: 5% Assoc.: 20% Assis.: 60% Lect.:10% Demo.: 5%	M: 50% F:50% Prof.: 10% Assoc.: 20% Assis.:60% Lect.:5% Demo.: 5%	Prof:Asso:Assis:Lect:Demo M 5:17:25:1:1 F 0: 2: 9: 2: 0

NCAAA KPI Reference Number: KPI-P-13

Proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	1.5%	less than 5%	7.5%	less than 5%	6.45%
Umluj	6%	less than 5%	8.5%	less than 5%	

NCAAA KPI Reference Number: KPI-P-14

Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	51.1%	60%	50%	70%	95%
Umluj	14.6%	20%	10%	20%	

NCAAA KPI Reference Number: KPI-P-15

The average number of refereed and/or published research per faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year).

Campus	Actual benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	0.5:1	1:1	0.5:1	1:1	5:1
Umluj	0.2:1	0.5:1	1:1	0.5:1	

NCAAA KPI Reference Number: KPI-P-16

The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	21:1	30:1	17:1	30:1	25:1
Umluj	10:1	10:1	8:1	15:1	

NCAAA KPI Reference Number: KPI-P-17

Average beneficiaries satisfaction rate with the adequacy and diversity of learning resources (references, journals, database etc.) on a five point scale in an annual survey.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	3.4	3.5	3.4	3.5	3.6
Umluj	2	3	2	3	

2.2.2 Summary of KPIs and Benchmarks

Table 0.14: A list of KPIs that are used in the SSRP (including NCAAA required KPIs):

Standard	Code	Key Performance Indicators	Description
-1- Mission and Goals	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	Percentage of performance indicators of the operational plan objectives of the program that achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year
-3- Teaching and Learning	KPI-P-02	Students' Evaluation of quality of learning experience in the program	Average of overall rating of final year students for the quality of learning experience in the program on a five-point scale in an annual survey
	KPI-P-03	Students' evaluation of the quality of the courses	Average students overall rating for the quality of courses on a five-point scale in an annual survey
	KPI-P-04	Completion rate	Proportion of undergraduate students who completed the program in minimum time in each cohort
	KPI-P-05	First-year students retention rate	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year
	KPI-P-06	Students' performance in the professional and/or national examinations	Percentage of students or graduates who were successful in the professional and / or national examinations, or their score average and median (if any)
	KPI-P-07	Graduates' employability and enrolment in postgraduate programs	Percentage of graduates from the program who within a year of graduation were: a. employed b. enrolled in postgraduate programs during the first year of their graduation to the total number of graduates in the same year
	KPI-P-08	Average number of students in the class	Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory or clinical session)
	KPI-P-09	Employers' evaluation of the program graduates proficiency	Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey

Standard	Code	Key Performance Indicators	Description
-4- Students	KPI-P-10	Students' satisfaction with the offered services	Average of students' satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, academic advising, ...) on a five-point scale in an annual survey
-5- Teaching Staff	KPI-P-11	Ratio of students to teaching staff	Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program
	KPI-P-12	Percentage of teaching staff distribution	Percentage of teaching staff distribution based on: a. Gender b. Branches c. Academic Ranking
	KPI-P-13	Proportion of teaching staff leaving the program	Proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff.
	KPI-P-14	Percentage of publications of faculty members	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program
	KPI-P-15	Rate of published research per faculty member	The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year)
	KPI-P-16	Citations rate in refereed journals per faculty member	The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published)
-6- Learning Resources, Facilities, and Equipment	KPI-P-17	Satisfaction of beneficiaries with the learning resources	Average of beneficiaries' satisfaction rate with the adequacy and diversity of learning resources (references, journals, databases... etc.) on a five-point scale in an annual survey.

Important Note

- Provide description and analysis for each KPI under the related standard
- ***Attach*** *a complete analysis report of the Program KPIs (including trends and comparisons based on gender and branches/locations)*

3. Evaluation in Relation to Quality Standards

Standard 1. Mission and Goals **(Overall Rating: 3)**

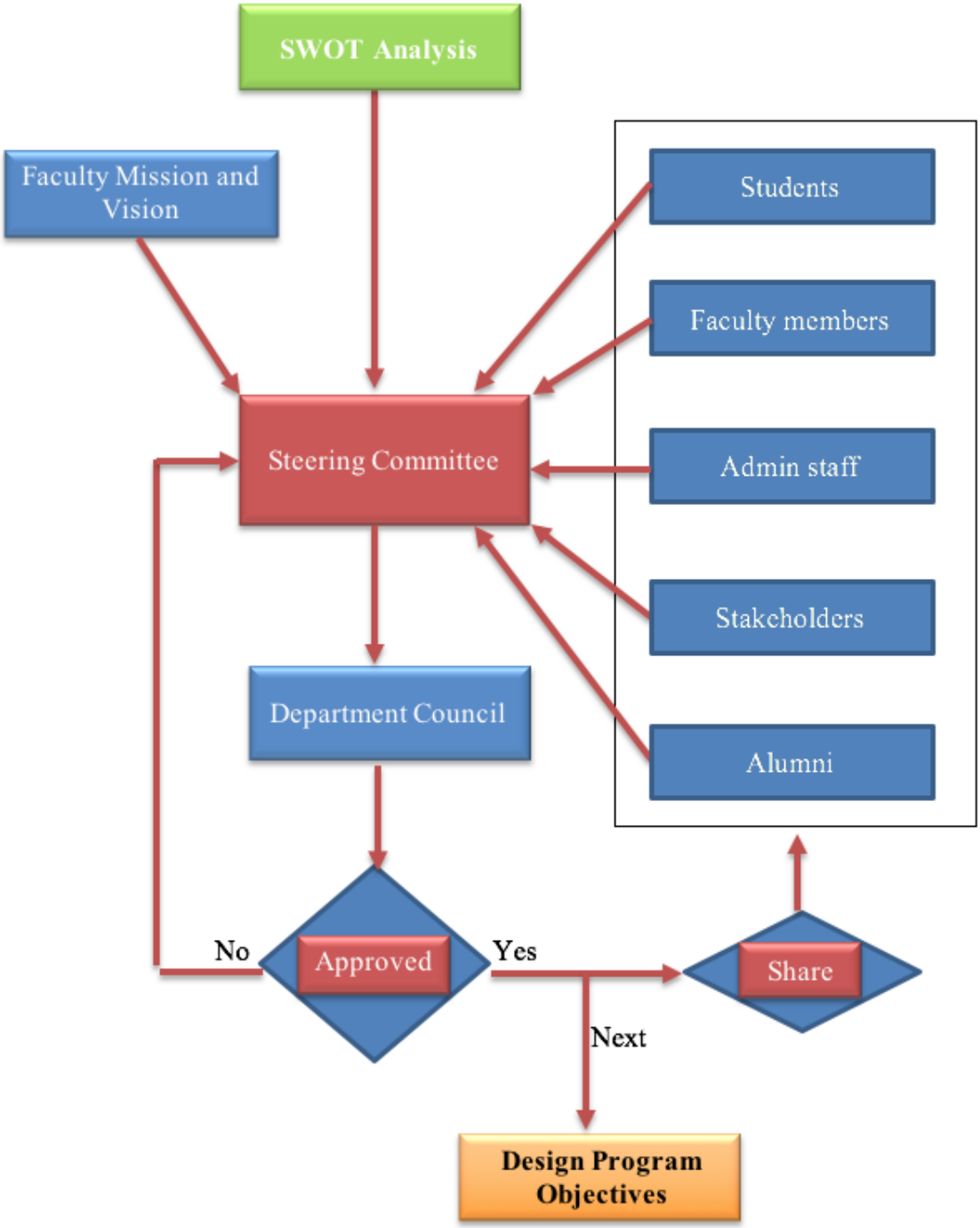
A. A brief realistic and objective presentation of the present status of the Program Mission and Goals

The Mathematics Program has a clear and appropriate mission. The mission of the Mathematics Program is consistent with the mission of FSUT, which in turn is aligned with the mission of UT. The mission deals with the major three areas of education, research and community service. It reads

" Providing mathematical and computing skills to graduates in an environment that encourages scientific research and community service".

The Mathematics Program has established its missions by following a well-structured process. The whole process started with extensive thinking and began with a current institutional analysis and the needs of FSUT. The next step in the process was to consider feedback from the main stakeholders and results from meetings with staff members and students. The mission was evaluated by students, faculty members from FSUT, and employers, then it was approved by the university President. The mission statement serves as an effective guide to decision-making regarding all aspects of FSUT's activities, including academic planning, quality assurance processes, faculty recruitment, program development, and community engagement. Achievable goals were derived from the mission statement approved by the twenty council of the Department of Mathematics that was held on 17/08/1442H (1.1), and were mapped to program learning outcomes and used as a guide for preparation of the operational plan. This process has ensured that the mission, having been established, would be consistent with the aspirations of the university and would focus on its priorities. The mission statements of FSUT and Mathematics Program are revised regularly at the med of the strategic plan period. Figure1, shows the main phases in the development process of the vision and mission statements.

Figure 1 Vision and Mission development Process Flowchart



A description of the process for the preparation on this standard:

1. A Program Context Committee was formed from members with high experience in quality assurance from both the male and female faculties. The committee is responsible for writing both standards 1 and 2.

2. Standard-1 requirements were defined by utilizing NCAAA related documents.

3. The sub-committee monitors the process of collecting evidence and writing standard 1.

4. The subcommittee for standard 1 investigated the following documents:

- Faculty and department's mission with program structure.
- Mathematics Program annual reports for academic years 1439/1440 and 1441.
- Strategic plan (2018-2022) and performance reports of years 2018-2020.
- Self-evaluation scales for higher education programs and identifying all strength points, weakness, recommendations and priorities for improvement. The opinions of the committee were used in the creation of a "Self-Evaluation Scale Report".
- All conducted surveys, analysis, reports and improvement plans.
- Results of measurements of Mathematics Program KPIs for the Internal and Actual Benchmarks.
- Investigation of the SWOT analysis of FSUT.

5. First drafts of the self-evaluation report of standard 1 were prepared.

6. Meeting was held with evaluators from the Vice-Presidency of Development and Quality in UT for evaluation of the quality of writing of standard 1 and suitability of the attached documents.

7. Feedback and recommendations from the review committee were used to refine and evolve the recommendations in the final report.

8. An external review was conducted by experts in the field of quality assurance.

9. Independent opinion was consulted to review the standard.

10. After the cycles of reviews, the SSRI report was ready.

11. Conclusions and recommendations for future continuous improvements were included.

B. Report on Standard:

1.Evaluation of Program Goals

The program goals were measured by:

1. Direct method by measuring the learning outcomes linked to the goals.
2. Indirect method by measuring employers' evaluation of the employability, number of students published research in peer reviewed journals as well as program graduates' proficiency and stakeholders evaluating program learning outcomes in graduates (Table below).

3. **Table 1: Evaluation of Program Goals:**

Goals	Performance Indicators	Target Benchmarks	Actual Benchmarks	New Target Benchmark	External Benchmarking
1-Create a curriculum that promotes critical thinking, analysis, and the application of mathematical programs.	Average of overall rating of final year students for the quality of learning experience in the program (KPI-P-02).	3.8	3.75	4	3.735
	Proportion of students entering undergraduate programs who complete those programs in the minimum time (KPI-P-04).	Main=40% Umluj=50%	Main=38% Umluj=46%	Main=40% Umluj=50%	24.86
	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year(KPI-P-5).	Main=80% Umluj=90%	Main=78% Umluj=84%	Main=80% Umluj=90%	57.85%
2-Raise students' academic achievement.	Proportion of students entering undergraduate programs who complete those programs in the minimum time(KPI-P-04).	Main=40% Umluj=50%	Main=38% Umluj=46%	Main=40% Umluj=50%	24.86
	Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-	Main=80% Umluj=90%	Main=78% Umluj=84%	Main=80% Umluj=90%	

	year students in the same year(KPI-P-5).				57.85%
3- Strengthening and improving faculty and staff members' abilities.	Average of overall rating of final year students for the quality of learning experience in the program (KPI-P-02).	3.8	3.75	4	3.735
	Students' overall rating of the quality of their courses (KPI-P-03).	Main=4 Umluj=4	Main=3.9 Umluj=4.3	Main=4.2 Umluj=4.4	3.8
4-Encourage participation in research programs and specialized scientific conferences.	Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program (KPI-P-14).	Main= 60 Umluj=20%	Main= 51 Umluj=15 %	Main= 70 Umluj=20%	95%
	The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year) (KPI-P-15).	Main= 1:1 Umluj=0.5:1	Main= 0.5:1 Umluj=0.2: 1	Main= 1:1 Umluj=1:1	5:1

	The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published(KPI-P-16).	Main= 30:1 Umluj=10:1	Main=21:1 Umluj=10:1	Main= 30:1 Umluj=15:1	25:1
5- Encourage effective community cooperation and communication.	Percent of staff members participating in the comunity activities	Main=100%	Main= 100%	Main= 100%	N.A
6- Providing an efficient administrative and organizational environment.	The percentage of achieved indicators for program operational plan objectives (KPI-P-01).	85%	80%	87%	75%
Comments:					

Strengths:

1. The program goals are measured by both direct and indirect methods.
2. The direct method includes measuring the learning outcomes linked to the goals.
3. The indirect methods include employers' evaluation of the employability, number of students published research in peer reviewed journals and students performance as well as program graduates proficiency and employers evaluating program outcomes in graduates.

Areas for improvement:

In the purpose of increasing the involvement of employers and stakeholders in the process of assuring the quality of the program and improving it, Mathematic Program needs to activate the role of advisory committee and to collect their opinion about improving the program and methods of assessment of learning outcomes.

2. Provide an analytical and critical report about the evaluation results of the standard based on required data, evidence and KPIs.

The mission of Mathematics Program:

Providing mathematical and computing skills to graduates in an environment that encourages scientific research and community service.

The missions of the Mathematics Program and Mathematics department are in accordance with the establishment decree and focus on three key aspects: education, research and community service. The mission statement clearly emphasizes the role of Mathematics Program in offering outstanding learning opportunities with knowledge, abilities and skills that are important to the fulfilment of community needs and construction projects. Furthermore, the mission specifies the role of FSUT in supporting scientific research and providing a distinguished administrative and learning environment. The program mission and department mission is revised regularly, as shown in the following table.

Table 2: The missions of Mathematic Program and Mathematics Department

	Old Mission	New Mission

The Mission of Mathematics Program	Provide graduates with mathematical and computational skills. produce research and serve the local community.	Providing mathematical and computing skills to graduates in an environment that encourages scientific research and community service.
The Mission of Mathematics Department	Preparing Graduates qualified in mathematics and its applications to meet labor market needs and serve the local community, as well as scientific research and innovation.	

The Mathematics Program mission is conceived and carried out with the successful participation of all relevant stakeholders. An online survey was undertaken to collect input from stakeholders, including faculty members, students, employees and local community representatives (1.0.1.1). The questionnaire took place at the beginning of 2020. Fifteen members agreed to participate in the questionnaire. It consists of 5 closed ended questions. The results of the questionnaire are summarized in Table3.

Table 3: Analysis of mission questionnaire (2020).

Statement	Response					Agreement
	Strongly agree	Agree	Agree to some extent	Disagree	Strongly disagree	
I am aware of the vision, mission and objective of the program.	12 (80%)	1 (6.7%)	1 (6.7%)	1 (6.7%)	0 (0%)	92%

The vision of the program is derived from its mission.	12 (80%)	2 (13.3%)	1 (6.7%)	0 (0%)	0 (0%)	94.6%
The program's mission is appropriate.	10 (66.7%)	4 (26.6%)	0 (0%)	1 (6.7%)	0 (0%)	90.1%
The program's mission corresponds to the actual needs of the labour market and national trends.	9 (60%)	4 (26.6%)	1 (6.7%)	1 (6.7%)	0 (0%)	88%
Is the program mission consistent with the college mission?	12 (80%)	1 (6.7%)	2 (13.3%)	0 (0%)	0 (0%)	93.4%

As revealed in Table 3, 15 participants (94.6%) accepted the fact that the vision of the program is derived from its mission, out of them 12 participants (80%) strongly agreed, 2 participants (13.3%) agreed and 1 participant (6.7%) agreed to some extent.

The strategic plan follow up committee in FSUT has developed a mechanism to disseminate and encourage the knowledge and use of its mission through the website of FSUT(1.0.1.2).

The mission of Mathematics Program is derived from the mission of Mathematics department and FSUT. In addition, the mission of FSUT is derived from that of UT. FSUT mission and the UT missions are aligned in providing education, undergoing research and serving the community, yet the mission of the faculty is more specialized. The comparison is provided in Table 4.

Table 4: The consistency of the missions of Mathematic Program, Mathematics Department, FSUT and UT

Comparison criteria	UT Mission	FSUT Mission	Mathematics Department Mission	Mathematic Program Mission

Whole statement	To offer a distinguished university education that prepares university graduates with the knowledge, capabilities, and skills needed by the community and developmental projects in the Tabuk region within an exceptional education and administrative environment that promotes innovative research.	Offering an outstanding academic learning to graduate qualified human cadres in the theoretical and applied sciences to meet the needs of the labour market and society in accordance with an environment that supports scientific research.	Preparing Graduates qualified in mathematics and its applications to meet labor market needs and serve the local community, as well as scientific research and innovation.	Providing mathematical and computing skills to graduates in an environment that encourages scientific research and community service.
Part deals with education	To offer a distinguished university education that prepares university graduates with the knowledge, capabilities, and skills needed.	Offering an outstanding academic learning to graduate qualified human cadres in the theoretical and applied science	Graduates qualified in mathematics and its applications	Provide mathematical and computing skills
Part deals with research	The Promotes innovative research	Supports scientific research	as well as scientific research and innovation.	in an environment that encourages scientific research

Part deals with community	By the community	Meet the needs of the labour market and society.	to meet labor market needs and serve the local community	And Community service.

The program's goals and Mathematics department's goals stem from its mission where Mathematics graduates should have attributes which qualifies them to serve the community. It helps them to contribute to community service through different means. Graduates are provided with skills such as problem solving, critical thinking and analysis, oral and written communication, and use of appropriate technology so as to provide scientific and technical services in various fields of science of different governmental and national sectors. They are consistent with the goals of UT and FSUT. The goals are measured by direct and indirect methods. Please refer to "Report of Mathematics Program goals (1.0.2).

Table 5: Matching of UT, FSUT, Mathematics Department and Mathematic program's goals:

UT strategic goals	FSUT Goals strategic goals	Mathematics Department goals	Mathematic Program's goals
	Goal 1: Development of programs, plans and courses.	Goal 1: Creating a curriculum and educational process that meets accreditation and standards of quality.	1. Create a curriculum that promotes critical thinking, analysis, and the application of mathematical programs.

Goal 1: Offering a distinguished university education that fulfils the needs of the labor market	Goal 2: Increase preventive and enrichment programs to support students' capabilities.	Goal 2: Motivating and assisting students in the learning, study, creation, and contributing to a positive social interaction.	Raise students' academic achievement.
	Goal 3: Strengthening and developing the capabilities of faculty and staff members.	Goal 3: Strengthening and enhancing the skills of faculty and staff.	Strengthening and improving faculty and staff members' abilities.
Goal 2: Supporting creative research for the enrichment of the knowledge economy.	Goal 4: Developing an environment supportive of scientific research.	Goal 4: Encouraging scientific and applied studies in various fields of mathematics.	Encourage participation in research programs and specialized scientific conferences.
Goal 3: Effective contribution to sustainable development and community services.	Goal 5: Promote fruitful partnership and effective communication between the college and the community.	Goal 5: Encourage successful collaboration and communication between the department and the community.	Encourage effective community cooperation and communication.

Goal 4: Developing the infrastructure, technology and services needed to provide an attractive and motivated educational environment.			
Goal 5: Developing an effective administrative and organizational environment at the university.	Goal 6: Developing an effective administrative and organizational environment in the college.	Goal 6: To create a collaborative environment between faculty and administrative staff in order to support the department's educational process.	Creating an efficient administrative and organizational environment.
Goal 6: Diversifying financial resources and improving financial efficiency.			

Table 5 shows that FSUT adopted 4 out of 6 strategic goals of UT. This can be explained by the fact that UT strategic goal number 4 and 6 "Developing the infrastructure, technology, and services to make a motivating and attractive educational environment available to the community and Diversifying financial resources and improving financial efficiency respectively" is associated to the funding and financial resources policies of UT thus it is not achievable by FSUT.

Table 6: The relation between the goals of (Mathematics department) and (Mathematic program).

	Program goal 1: Create a curriculum that promotes critical thinking, analysis, and the application of mathematical programs.	**Program goal 2:** Raise students' academic achievement.	**Program goal 3:** Strengthening and improving faculty and staff members' abilities.	**Program goal 4:** Encourage participation in research programs and specialized scientific conferences.	**Program goal 5:** Encourage effective community cooperation and communication.	**Program goal 6:** Providing an efficient administrative and organizational environment.
First Department goal: Creating a curriculum and educational process that meets accreditation and standards of quality.	✓	✓				
Second Department goal: Motivating and assisting students in the learning, study, creation, and contribution to a positive social interaction.		✓				

Third Department goal: Strengthening and enhancing the skills of faculty and staff members.			✓			
Fourth Department goal: Encouraging scientific and applied studies in various fields of mathematics.				✓		
Fifth Department goal: Encourage successful collaboration and communication between the department and the community**.**					✓	
Sixth Department goal: To create a collaborative environment between faculty and administrative staff in order to support the department's educational process.						✓

Table 6 correlates Mathematics Program goals to six of the goals of the Mathematics department.

Table 7: The relation between the goals of (FSUT) and (Mathematic program).

	Program goal 1: Create a curriculum that promotes critical thinking, analysis, and the application of mathematical programs.	**Program goal 2:** Raise students' academic achievement.	**Program goal 3:** Strengthening and improving faculty and staff members' abilities	**Program goal 4:** Encourage participation in research programs and specialized scientific conferences.	**Program goal 5:** Encourage effective community cooperation and communication.	**Program goal 6:** Providing an efficient administrative and organizational environment.
First strategic goal: Development of programs, plans and courses.	✓	✓				
Second strategic goal : Increase preventive and enrichment programs to support students' capabilities.		✓				
Third strategic goal: Strengthening and developing the capabilities			✓			

of faculty and staff members						
Fourth strategic goal: Developing an environment supportive of scientific research.				✓		
Fifth strategic goal: Promote fruitful partnership and effective communication between the college and the community.					✓	
Sixth strategic goal: Developing an effective administrative and organizational environment in the college.						✓

Table 7 correlates Mathematics Program goals to the strategic goals of FSUT.

The mission statement consists of three fundamental parts, with each part addressing one of the three key functional aspects of FSUT (education, research and community service). The mission statement is clear, concise, specific, and serves as an effective guide to institutional decision-making regarding all aspects of FSUT's activities, including academic planning, quality assurance processes, faculty recruitment, program development, and community engagement. The Strategic Plan of FSUT was approved in 2018 (1.0.3). It was developed after extensive revision of the faculty environment in the aim to achieve its mission and goals.

The Mathematics Program's goals and department's goals are linked with the strategic goals of both FSUT and UT. In addition, Mathematics Program goals are linked with the mission statement of the program and FSUT as well as the KPI are determined for measuring the achievement of goals(1.0.2). The goals of the Mathematics Program are used in the strategic planning and in measuring the achievements of strategic goals of FSUT (Table 8).

Table 8: Strategic goals of FSUT, initiatives and KPIs of (Mathematic program):

Strategic goal	initiatives	KPIs	Completion rate		
			2018	2019	2020
1- Development of programs, plans and courses.	1.1 Restructuring academic programs in line with the Kingdom's 2030 vision.	Number of programs completed Adapted in light of the vision Kingdom 2030.	-	100%	100%
	1.2 Update course books and references.	The percentage of data that is included in the database.	-	100%	100%
2- Increase preventive and enrichment programs to	2.1. Providing guidance services to defaulting students.	Number of advising services for students Defaulters.	100%	100%	66.67%
	2.2. Discovering the talents of college students and developing them.	Number of activities Students, Held.	100%	100%	-

support students' capabilities.	2.3. Providing extension services to outstanding students.	Number of student counseling services Outstanding students.	100%	100%	-
	2.4. Linking education with training by holding training courses for students	Number of training programs and enriching activities accompanying the academic curricula.	-	-	-
3- Strengthening and developing the capabilities of faculty and staff members.	3-1 Encouraging faculty members to participate in local and international seminars and conferences.	The percentage of change in the participation of faculty members in local and international conferences annually.	100%	100%	100%
	3-2 Encouraging faculty members to attend local and international seminars and conferences	Percentage of change in the attendance of faculty members in local and international conferences annually.	100%	100%	100%
	3-3 Adopting a number of awards for distinguished research faculty members	The number of researchers who won awards.	100%	100%	100%
	3-4 Preparing training courses to develop the	Number of training sessions for developing skills	-	100%	

	skills of faculty members	Members of the academic staff.			100%
	3-5 A contract of cooperation in the field of scientific research	Number of Scientific agreements with the authorities and various parties.	100%	100%	100%
	3-6 Conducting joint research between the various scientific departments and faculties of the university	Number of research papers jointly prepared by faculty members in the college departments.	100%	100%	100%
4- Developing an environment supportive of scientific research.	4-1 Building research partnerships with local community institutions	Number of research partnerships that have been agreed upon.	100%	100%	-
5- Promote fruitful partnership and effective communication between the college and the community.	1-5 Encouraging and motivating university employees to do volunteer work to serve the community.	Percentage of faculty members and employees participating in volunteer work in the community.	87%	50%	0%
	2-5 Promote social responsibility programs that support the achievement of sustainable development	The level of community satisfaction with the college's contribution to sustainable development requirements.	-	-	-

	3-5 Contribute to providing health awareness to the community	The number of open days that coincide with the international health days, such as the Day of Diabetes, Cancer and others, and the number of awareness activities.	100%	100%	-
	4-5 Establishing open days for community members	The number of open days the university organizes for its local community.	100%	100%	-
	5-5 Providing counselling and awareness programs for the community	Number of educational programs offered by the college to the community.	100%	50%	-
6- Developing an effective administrative and organizational environment in the college.	1-6 Developing organizational, procedural and administrative guides for the various departments in the college	Percentage of different administrative units in the college whose structures have been developed.		100%	100%

The learning outcomes of Mathematics Program are consistent with its goals. The detailed correlation between the program learning outcomes and the program goals are represented in Table 9.

Table 9: Relation between Mathematical Program learning outcomes and the program goals.

	Mathematic Program learning outcomes	Mathematic Program's goals					
		1	2	3	4	5	6
1.0	Knowledge						
1.1	Recall the fundamental theories and concepts of mathematics, science.	✓	✓	✓			
1.2	Recognize the utilization of mathematics in other fields.	✓	✓	✓			
2.0	Cognitive Skills						
2.1	Analyze problems in advanced areas of mathematics using analytic and computational methods.	✓	✓	✓	✓		
2.2	Prove theorems using the language of mathematics	✓	✓	✓	✓		

2.3	Apply knowledge of mathematical principles, theories and procedures in real life and scientific domains.	✓	✓	✓	✓		
2.4	Demonstrate rigorous reasoning, critical thinking and problem solving skills.	✓	✓	✓	✓		
3.0	Interpersonal Skills & Responsibility						
3.1	Perform research and in conjunction with others.	✓	✓	✓	✓	✓	
3.2	Manage duty, and time with other members of the group.	✓	✓	✓	✓	✓	✓
3.3	Demonstrate ability of presentation skills.	✓	✓	✓	✓	✓	✓
4.0	Communication, Information Technology, Numerical						
4.1	Communicate mathematical ideas with clarity and coherence, both written and verbally.	✓	✓	✓	✓	✓	✓

4.2	Demonstrate mathematical problems by mathematical packages.	✓	✓	✓	✓	✓	✓

The process of developing Executive committee (see Self Study Process Section) that were linked to the Operational committee ensured that the program objectives were matched with Faculty plan through the follow-up of the executive plan of the Faculty with the operational plan of the department in all the different committees to verify compliance with Faculty objectives and with the NCAAA requirements and criteria as shown in table 11. Student admission guides and current study plans are the evidence of The program goals and its implementation needs are linked to appropriate operational plans that are consistent with the college plans (1.0.4).

Table 10: The operational plan of FSUT and its relation to Mathematical program

Strategic goal	initiatives	Operational goals
1- Development of programs, plans and courses.	1.1 Restructuring academic programs in line with the Kingdom's 2030 vision.	Restructuring the academic programs aligned with the vision of 2030.
	2.1 Update course books and references.	Create a database of course references and update them.
	2.1. Providing guidance services to defaulting students.	Providing guidance services to defaulting students.

2- Increase preventive and enrichment programs to support students' capabilities.	2.2. Discovering the talents of college students and developing them.	Presentation of products Examples of scientific activities and projects undertaken by students.
	2.3. Providing extension services to outstanding students.	Providing counseling services that help excellent students to be creative.
	2.4. Linking education with training by holding training courses for students.	Linking education with training by holding training courses for students.
3- Strengthening and developing the capabilities of faculty and staff members.	3-1 Encouraging faculty members to participate in local and international seminars and conferences	Increase the participation rate of faculty members in scientific conferences.
	3-2 Encouraging faculty members to attend local and international seminars and conferences	Increasing the percentage of faculty members attending scientific conferences.
	3-3 Adopting a number of awards for distinguished research faculty members.	Raising the level of research competence and excellence in scientific research of faculty members.
	3-4 Preparing training courses to develop the	Training courses to develop the skills of the teaching staff in research.

	skills of faculty members.	
	3-5 A contract of cooperation in the field of scientific research.	Access to a number of scientific agreements with various bodies and parties.
	3-6 Conducting joint research between the various scientific departments and faculties of the university.	Finding joint research cooperation between the departments of the college.
4- Developing an environment supportive of scientific research.	4-1 Building research partnerships with local community institutions.	Established a number of research partnerships with the local community.
5- Promote fruitful partnership and effective communication between the college and the community.	5-1 Encouraging and motivating university employees to do volunteer work to serve	Serving the local community and its individuals and institutions through communication with members of the community in the developmental spirit of cooperation and citizenship.
	2-5 Promote social responsibility programs that support the achievement of sustainable development	Achieving sustainable development, preserving the environment, and balanced consumption.
	3-5 Contribute to providing health awareness to the community	Prevention and preservation of community members.

	4-5 Establishing open days for community members	Communicate with local community
	5-5 Providing counselling and awareness programs for the community	Contribute to educating members of society.
6- Developing an effective administrative and organizational environment in the college.	1-6 Developing organizational, procedural and administrative guides for the various departments in the college.	Raise the level of efficiency of the various administrative units in the college.

Mathematic Program specifications clearly illustrated the program goals and the KPIs used for their assessment. The measured KPIs of goals of the program, were fully analysed in (1.0.2). In addition, an improvement plan was approved to be implemented in the current academic year at that report.

The UT has a permanent committee in place to review implementation of its Second Strategic Planned all related operational plans and periodically assess the mission, goals, objectives, and other strategic core aspects of its operations. The permanent committee is dedicated to continuously informing the various stakeholders of any change in the mission. Moreover, the UT has established a guideline for governing the process of achieving the strategic and operational plans among all the UT's bodies. As mentioned in page 45 of the strategic plan governance guideline(1.0.6): "At the mid of the second strategic plan period, the UT mission and goals and all faculties and programs' missions and goals will be assessed and reviewed by involving all stakeholders". Therefore, the first review and assessment will take place in the first quarter of 2021 with the cooperation of all stakeholders. Thus, any changes will be announced to all stakeholders. The programme is part of this structure which follows the same plan.

Table1.2: KPI –*stakeholder's awareness of the mission statement and objectives.*

NCAAA KPI Reference Number: KPI-P-01
Description:
The average rate of stakeholder's awareness of the mission statement and objectives.

campus	Stakeholders	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	Students	84%		76%		
	Faculty members	100%		100%		
	Average	92%	90%	88%	95%	NA
Umluj	Students	85.7%		80%		
	Faculty members	100%		100%		
	Average	93%	90%	90%	95%	NA

Analysis:

The actual value of this KPI is quite satisfactory at all sites, which reflects the effectiveness of the practices followed up by the mathematics program in puplicicing its mission and objectives among all the stakeholders. Beside publishing its mission and objectives on the website, through emails and on the departmental notice board, the mathematics program puts more emphasis on its mission and vision statements by adopting the practice of writing them at the back of the front page of exam books. No special emphasis has been put into publicizing the mission statement and objectives among external stakeholders such as employers that is due to the lack of structured relation with external stakeholders.

Recommendations:

1. The mathematics program should develop and implement structured relations with external stakeholders and put more emphasis in communicating its mission, vision and objective to them.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the stakeholder's awareness of the mission statement and objectives.

2. How was the benchmark calculated?

The average rate of stakeholder's awareness of the mission statement and objectives is calculated from the analysis of the survey results.

3. Name of the internal benchmark provider?

The development and quality committee

C. Overall Evaluation for Quality of the Standard:

Strengths:

1. The mission, and objectives of the Department and the program are clear, smart and measurable.
2. The statement of the program's mission is consistent with all the Department, Faculty and University's mission statements.
3. The goals and the mission statement are achievable through effective strategies that can be implemented within the level of resources expected to be available.
4. The stakeholder's satisfaction rate for the program's mission and goals is quite high.

Areas for Improvement:

1. More implementations for the program's operational plan.
2. The percentage of achieved indicators for the operational plan is lower than expected in some of the initiatives.

Priorities for Improvement:

1. More implementations for the program's operational plan.
2. The percentage of achieved indicators for the operational plan is lower than expected in some of the initiatives.

Standard 2. Program Management and Quality Assurance (Overall Rating: 3)

A. A brief realistic and objective presentation of the present status of the Program with respect to Program Management and Quality Assurance

The Mathematics department at UT is known for its commitment to quality in the education of its students, its research output, and its alignment with its mission. In addition, The Mathematics Program has a clear management and quality assurance system in place that plays a good role in guiding decisions and planning processes.

The development and quality committee program leadership implements, monitors and activates the quality assurance systems that achieve continuous development of program performance in a framework of integrity, transparency, fairness, and within a supportive organizational climate. The Faculty of Science University of Tabuk leadership is committed to its organizational structure as a model for effective and responsible leadership which ensures accountability and transparency. Also, there is equal treatment between faculty members of both genders. A Vice-Dean (female section) runs the female section and directly reports to the Dean. Each academic department in FSUT has a female supervisor who runs the female section and directly reports to the department head. The female staff is represented at all councils, committees, and units, including those relating to curriculum development and quality committees.

The Dean has sufficient authority to run the Program. Besides, the job description of the Dean and Vice-Deans in the Faculty are well described by the higher administration in UT and documented in the task guide for leadership positions in the colleges and supportive deanships at the UT. FSUT has six academic departments, chaired by qualified and experienced faculty members. The academic departments are:

- Mathematics
- Physics
- Chemistry
- Biology
- Biochemistry
- Statistics

The academic departments are responsible to deliver the curriculum for both male and female students. Each academic department is considered a single academic unit providing collaborating education and research activities; hence its respective department council (containing both male and female staff members) is responsible for the achievement of optimum learning outcomes of the Mathematics Program in line with the program mission and objectives. All department councils are reported to the Dean for approval.

FSUT has formed several committees to help out in driving both administrative and academic duties. The executive order of appointing every committee describes its purpose, rules and standard operating procedure. All committees follow the policies of the Ministry of Education and the University of Tabuk. All committee meetings are reported to the Dean or the Vice-Deans (Figure 4). The Mathematics program also is committed to its administrative organization structure as a model for effective and responsible leadership as seen in figure (Figure 5)

Figure 4: Organization of administrative structure in the Faculty of Science.

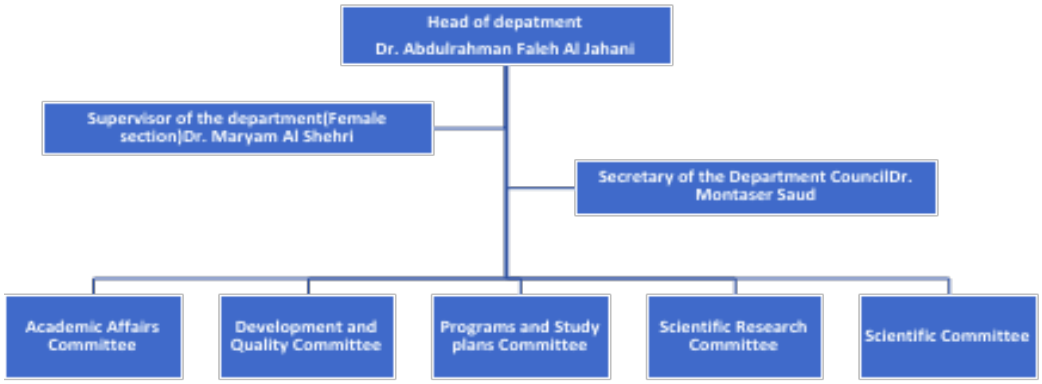


Figure 5 Organization of administrative structure in the Mathematics program.

A description of the process for the preparation on this standard:

1. A Quality Assurance Committee was formed from members with high experience in quality assurance from both the male and female faculties. The committee is responsible for writing both standards 1 and 2.
2. NCAAA-related documents were used in the definition of standard-2 requirements.
3. The committee was involved in the evaluation of the evidence collection and standard writing for standard 2.
4. The standard 2 committees were involved in the investigation of documents:

- The FSUT manual guide includes the Dean, Vice Dean, academic departments, and specific committees' job description.
- Administrative decisions by the Dean of FSUT for establishment and authentication of the program structure such as quality assurance unit, quality control activities, head of the departments, academic affairs and program management team.
- The analysis of previous years based on annual reports FSUT strategic plan (2018-2022) .
- Samples of administrative documents of academic departments and specific committees such as minutes of meetings, reports, plans and decisions, which include both male and female faculty members.
- Using self-evaluation reports do determine the characteristics of the higher education programs and provide recommendations.
- Generating survey results based on the analysis of reports.
- The KPIs of the mathematics program measurements.
- The mission and program structure of departments and faculties.
- Curriculum vitae of Faculty members available at the academic departments.

- Descriptions and study plans obtained from the scientific departments' website.
- FSUT SWOT analysis.
- Training courses attended by program members (e.g. training course on learning outcomes, blackboard education system etc.).
- The following Bylaws and manuals: Student guide for registration and university life - Student discipline regulation and its procedural steps – Student "Exam Bylaws" – Students Rights Bylaws – Financial affairs Bylaw – Regulations of: Students' Affairs Manual – Academic supervision manuals.
- Self-evaluation report prepared for standard 2.
- The meetings between the evaluators of the Vice-presidency of development and quality to determine the authenticity of the documents provided.
- Review committee's feedback and recommendations used to make corrections to the final report.
- Quality assurance external review.
- Independent opinion to confirm the standard review.
- The SSR report completed after review cycles.
- The conclusions and future recommendations.

B. Report on Sub-standards:

(Provide an analytical and critical report about the evaluation results of each sub-standard based on required data, evidence, and KPIs).

2-1 Program Management

The policy of the administration process in FSUT follows the hierarchical organization (Figure 4). The program administration starts at the level of the Faculty Board which seeks to develop an effective leader of the Mathematics Program through strategic plan development and follow-up processes to make decisions and to oversee the department's activities within a clearly defined administrative and academic structure. All tasks are clearly described in by Unified By-Laws for Saudi Universities (2.1.1); the higher administration in UT and documented in the task guide for leadership positions in the colleges and supportive deanships at the UT (2.1.2)

The Faculty Council is the next administrative decision-making authority of the program within the framework of the Ministry of Education and UT and consists of the Dean of the Faculty, the Vice-Deans, and all heads of the scientific departments. The Faculty Council bears in mind the issue of continuous and effective development of the program and considers it as the main aim to achieve the best for both male and female students. The assessment of the performance enclosed in the annual reports relies on the students' academic achievements and students' surveys. All decisions made by the FSUT Council are reported to the President of UT for approval before its implementation.

2-1-1 The program is governed by specialized councils (College Council, Department Council) with defined tasks and authorities.

The FSUT consists of six academic departments. Each department has its council, which consists of staff members in the department in both male and female sections. The Mathematics program is governed by a specialized council with different committees see Figure (5) that follows specific

regulations and rules. The department of the Mathematics council's members are responsible for discussing issues raised by the secretary of the council to govern the internal and external issues.

The decisions are then reported to the Dean for approval before subsequent implementation. Besides, the Faculty Council approves the decisions of major changes made by different academic departments during program delivery. Finally, FSUT has formed several committees to help in carrying out the routine tasks and to ensure the continuity and consistency of program goals. The executive order of appointing every committee by the Dean describes clearly its roles, purpose, and standard operating procedure, which follow the policies framework of the Ministry of Education and UT (2.1.1.1) and (2.1.1.5). All committee meetings are reported to the Dean or the Vice-Deans as established in the description in their executive order.

The organization of the department council:

- The department council holds at least once a month, and the meeting is only permitted with the attendance of two-thirds of its members, the members who normally enter the department council be Assistant Professor and above.
- Decisions are made in the department council by voting, considering the vote of the head of a department as the casting vote to resolve any dilemma.
- We consider the council's decisions to be effective unless objection is answered by the Dean of FSUT within 15 days from the date of their arrival (2.1.1.2)

Tasks and responsibilities of department council:

- Recommending the operation plan that aligned with the faculty's strategic plan in line with the university's strategic plans.
- Suggesting an operation plan for scientific research in the department.
- Approving the general plan for implementing quality and academic accreditation in the department.
- Consider appointing department members, teaching assistants, and lecturers, as well as their deputations, and promotions.
- Recommending the approval of the study plans updated by the responsible committees.
- Approval of curricula, textbooks and references in the department.
- Encouraging the necessary training and scholarship plans for members (2.1.1.2).

The department council consists of specialized committees members see Fig. 5, that have the authority to make the decisions after participating in these decisions with members of branch Umluj by the alignment committee for making decisions related to some internal and external issues related to the Mathematics program see evidence (2.1.1.6). Then, the department of Mathematics council has the authority to take the decisions in which these decisions are then transferred to the faculty council for final discussion and approval. The Faculty council contains the Faculty Dean as head of the Faculty Council (2.1.1.3)

The organization of the faculty council:

- The faculty council is held at least once a month, and the meeting is only permitted with the attendance of two-thirds of its members.
- Decisions are made in the faculty council by voting considering the vote of the member gives dean as the casting if the vote of member is tied to resolve any dilemma.
- We consider the council's decisions to be effective unless an objection is answered by Rector University of Tabuk within 15 days from the date of their arrival to the Rector (2.1.1.3)

Tasks and responsibilities faculty council:

- Consider appointing faculty members, teaching assistants, lecturers, seconding them, delegating them, and promoting them.
- Recommending the approval of the study plans proposed by the academic departments.
- Encouraging the preparation and coordination of scientific research among the departments of the faculty and attempting to publish them.
- Suggesting dates for the examinations and setting the regulations for their conduct.
- Suggesting the internal regulations of the faculty.
- Suggesting training plans and the necessary missions for the faculty.
- Deciding on student matters that fall within its jurisdiction and directing to the University Council, except for that.
- Looking into what the University Council, its president, or his vice-president refers to, to study and express an opinion (2.1.1.3).

If there is a major issue, it will be discussed in the faculty council and referred to the university council for further action. All decisions made by the FSUT councils are reported to the Rector of UT for approval before its implementation.

All committees' meetings should be reported to the head of department (2.1.1.4).

2-1-2 The program leadership has the appropriate academic and administrative experience to achieve its mission and goals.

The leadership of FSUT involves the Dean, Vice-Deans and heads/supervisors of academic departments. The Vice-Deans inside FSUT are Vice-Dean for male, Vice-Dean for Female Section, Vice-Dean of Development & Quality, Vice-Dean of Graduate Studies & Research. Faculty members who assumed administrative positions were the ones who had graduated and had their PhD from well-established universities around the world and progressed in the academic positions (2.1.2.4).

In addition, they are keen to continuously develop their skills, whether academic or administrative, through workshops provided by UT. Members of the mathematics program have in-depth knowledge of the strategic aims and educational activities of the Mathematics program, and the needs of the community that they serve (2.1.2.5, 2.1.2.6). The head of the department who governs and manages the program is an Assistant Professor in the Mathematics Program as well as experienced in the administrative and management field.

His tasks are following:

- He is responsible for following and guiding the process inside the department.
- Guiding admission of students for both undergraduate and graduate programs.
- Ensuring that all the necessary arrangements are in place for the teaching and assessment of students in partnership with the faculty who have primary responsibility for teaching first-year students.
- Guiding the reviewing of course specifications by the responsible committees regularly.
- Receiving, directing and guiding requests and resolving issues related to academic achievement in its department.
- Coordinating and developing the department's relations with the female section inside and outside the university.

The obligation of responsibility is generally governed by regulations for Saudi Universities (2.1.2.8)

Regarding the female section, there is a department's supervisor who associates with the Vice Dean for the female section of the faculty and organizationally linked to the head of the department (2.1.2.1), (2.1.2.2) and (2.1.2.7).

Her tasks following

- Supervising the preparation of the operational plans of the department and following up their implementation in the female section.
- Supervising the administration of the department's educational, research, and administrative affairs in the department Female students.
- Following up the receipt of reports for each division of the department of female members at the end of every semester.
- Coordinating and developing the department's relations within the female section.
- Supervising and raising the level of quality and developing its outputs in the female section.
- Follow up on the affairs of female instructors and lecturers in the department, and coordinate with the head of the department regarding their duties.
- Supervising the various student activities in the department in the female section.

- Receiving, directing and guiding requests and resolving issues related to academic matters in the female section.

Thus, the Mathematics department uses clear policies and procedures governing the communication protocols between male/female sections. Making sure that quality indicators for both sections male/female are regularly evaluated and used to support decision making is to be developed as noticeable in committees of the department of mathematics where both male and female are members in the department committees (Also, Make sure the participation of both members male/female in committees of the department of mathematics where both male and female members in the department committees (2.1.2.8).

Similarly, all policies applied in the main campus are applied in the branch (Umluj).

2-1-3 The program has a sufficient number of qualified staff to perform its administrative, professional and technical tasks, and they have defined tasks and authorities.

All positions tasks and authorities are defined in the Job description file (2.1.3.1Organizational Structure, Duties, and Responsibilities) and (2.1.3.4)

1/ administrative tasks (leadership)

The program has a sufficient number of members in the qualified leadership group guided by the Dean with designated vice-deans for respective (Academic, Quality, Research/postgraduates, and Female) sections. In addition, they also perform an important role in the mathematics program through implementation, evaluation, and development. They recommend the needed modifications in the program and represent them in the faculty council for discussion, then decision making. Each department is headed by a qualified staff member to guide and integrate all academic and administrative tasks (2.1.3.2).

2/ professional tasks

a) Teaching staff

The current staff is qualified to perform the required tasks. The majority of faculty members who are appointed to the Mathematics program came from various nations with high qualifications and good experiences in research, teaching, and administration which adds variety to the program (2.1.3.3). The ratio of students to teaching staff is linked to the KPI-P-11, which also compares that with the External Benchmark of King Khaled university is around 1:13 see table (2-1). In fact, the total number of professors, associate, and assistant professors is linked to the KPI-P-12 (2.1.3.5).

b) Assistant Teaching staff

The number of assisting teaching staff (demonstrators), joining Mathematics programs for helping teaching staff in some courses. Full data about teaching assisting staff is discussed in table below:

Teaching Staff	Saudi	Non-Saudi	Average Teaching Load For All Teaching Staff

		Male	Female	Total	Male	Female	Total	Male	Female	Total
Faculty Members	**Professor**	0	0	0	1	0	1	10 H	10 H	
	Associate Prof.	0	2	2	5	0	5	12 H	12 H	
	Assistant Prof.	4	5	9	15	4	19	14 H	14 H	
	Total	4	7	11	21	4	25			
Other Teaching Staff	**Lecturer**	1	5	5	0	0	0	16 H	16 H	
	Demonstrator	6	7	13	0	0	0	16 H	16 H	
	Teaching Assistant	1	6	7	0	0	0	17 H	17 H	
	Total	8	18	25	0	0	0			

Comments:

At the main campus the current total number of teaching staff is 63which is quite adequate. Where the overall ratio of students to teaching staff is 1:13. The number of PhD holders at the female section is quite low compared to the male section, one of the reasons is the shortage in the available number of female PhD holders. The average teaching load is quite adequate also at both male and female sections. Also the mathematics program has about 13 demonstrators (6 males and 7 females) who play a role to assist the teaching staff.

3/ Technicians

There are 2 identical laboratories in male and female sections namely; computer labs. For the male section, there are 2 specialized technicians serving for these Labs, they were assigned to computer labs. For the female section, there are 2 technicians assigned for managing Labs. Despite many requisitions made to increase the number of female technicians, shortages remain due to the non-availability of suitable candidates.

2-1-4 The program management acts to provide an organizational climate and supportive academic environment).

Program management had taken many actions to make conducive organizational climate and supportive academic environment, these actions could be summarized in the following points:

- Identification of the mission, vision and shared values for programme and department, to ensure evaluation of the department's own performance in areas of teaching, community services and research. (see evidence (2.1.4.1 and 2.1.4.5)).
- Establishing an organization chart with a defined hierarchy, levels of authorities, tasks, responsibilities and interrelation between units, committees, departments, vice deanships and program governing body Figure.4 (2.1.4.6).
- Defined roles and responsibilities to ensure clear demarcation between functioning units, committees and positions. Moreover, to facilitate a high level of communication among them (see evidence (2.1.4.2).
- Making decisions based on evidence and in accordance with the mission of the program after having a proper discussion within the respective teams, units, departments or program governing body. These decisions are based on voting following fulfilment of the quorum of committee meetings with due consideration of all stakeholders in the decision-making process including students, staff, employer and sometimes community representatives (2.1.4.4).
- Annual academic faculty excellence award with defined selection criteria and annual award for best teacher and researcher (2.1.4.3 Excellence Award Version 2020).
- Announcement for excellent students on the honours board on the Mathematics department's website (2.1.4.7).

2-1-5: There are appropriate mechanisms for integration and effective participation among branches offering the same program.

At the Mathematics program level, all students in both male and female sections have the same facilities whether in Tabuk University or Umluj campus. The curriculum, student support services and assessment guidelines are exactly the same for both genders in the main campus or branch see evidence (2.1.5.1).

There are various measures to ensure consistency between UT and its branch (Umluj) for male and female sections regarding teaching/learning activities, facilities and resources and quality measures.

These measures are categorized into actions as follows:

- The same course contents, teaching strategies and assessment methods for both of them (see evidence 2.1.5.2). In addition, there is a common google drive that can be accessed by the main campus (Tabuk) and branch (Umluj) to upload all documents regarding mathematics program (2.1.5.3)

- Separate course reports for each section to ensure evaluation of course quality for both the sections and combined one (2.1.5.4).

- Other course evaluations results, including achievement of courses and program learning outcomes, courses and program evaluation surveys and course reporting, are also expressed separately for both of them as well as in the combined form with proposed improvements based on evaluations.(KPIs report 2.1.5.6)

- Analysis of program statistical data and indicators with any significant differences between both of them (see evidence 2.1.5.6).

- Courses and program evaluations using various types of surveys are conducted employing the same methodology, analysis, interpretation and improvement measures for both of them simultaneously see evidence (2.1.5.5)

2-1-6 The program is committed to applying the institutional regulations governing the educational and research partnerships (if any) in order to ensure the quality of all aspects of the program, including courses, educational resources, teaching, student achievement standards, and offered services. (we don't have any partnership)

N/A

2-1-7 The program assesses the effectiveness of its educational and research partnerships (if any) on a regular basis and makes appropriate decisions accordingly.

N/A

2-1-8 The program management monitors its commitment to implement its role in the community partnership plan of the institution through specific performance indicators.

The community serving is an important pillar of the Mathematics programme mission. The mathematics program is committed to the program mission is "Graduates qualified in mathematics and its applications to meet labour market needs and serve the local community, as well as scientific research and innovation".

The community participation of teaching staff is considered as an aspect of the Mathematics department. In addition, establishing cooperative partnerships with government and special sectors for improving training outcomes, practical and field and increasing acceptance opportunities for the secondary graduates (see evidence (2.1.8.1). For example, members of the mathematics department carried out different activities as voluntary work such as participating in a community initiative for orphans. Also, the department participated in an event in which most of the faculty members and students were involved (see evidence 2.1.8.2). Department members' contributions to the community are considered as a point of promotion points and participation in the college's extracurricular activities (2.1.8.3).

At the beginning of each academic year, the community service and skills development Unit organizes community-based activities that are in line with the mathematics programme commitment to participate in community service, which includes activities organized by the faculty, its staff or students. Additionally, the community service and skills development unit prepare a detailed annual report about its involvement in community activity both as a participant and as an organizer (2.1.8.4)

Finally, the community service activities of FSUT are considered as a goal of the FSUT strategic plan. Thus, the achievement of the operation plan of the fifth goal is "Effective promotion of the valuable partnership between the community and faculty" as a strategic goal of FSUT (2.1.8.5) and is measured through the following indicators:

- The number of educational and cultural programs provided by the activity community service and skills development unit that the mathematics department participated in.
- Percentage of faculty members and employees participating in volunteer work in the community.

The details of mechanisms, performance indicators and responsibilities are assigned in the operational plan (2.1.8.6). The strategic plan unit in UT supervises the whole process by the strategic plan unit in UT. Then, it was boosted to the Rector of UT to be presented in the university council for discussion of achievement. Finally, The achievement of KPIs of the operational plan of the mathematics department is summarized in (2.1.8.5).

2-1-9 The program management monitors its commitment to implement its role in the research plan of the institution through specific performance indicator

The mathematics program's scientific research was based on the mission and goals of the department. It has been informed by FSUT's fourth strategic goal, "Developing an environment supportive of scientific research" that is based on initiatives (2.1.9.1) below:

- Establishing and equipping a central laboratory that serves all practical departments.
- Establish an electronic maintenance unit to provide periodic maintenance for scientific devices.
- Attracting distinguished technicians to work in laboratories.
- Building research partnerships with local community institutions.
- Establishing joint projects to solve environmental and societal problems.

The documented operational plan includes details of the strategic goal that comprises incentives, mechanisms, timeframe, performance indicators, goal, and responsibilities. Each faculty member is working hard to achieve the strategic goal according to the plan devised. The activities involved in scientific research done through the mathematics program have been included in the FSUT strategic plan submitted through an online platform to the UT. The indicator that can be used to measure the way the fourth strategic goal has been achieved is (2.1.9.2):

- Number of papers published with the participation of students.
- Number of training courses to develop the skills of faculty members.
- Number of researches by faculty members in the departments of the faculty.
- Number of different scientific meetings that the department contributes to holding in the college and university at both levels: local and international.
- Number of researchers who won awards. (2.1.9.3)

The department members of the mathematics program work hard to implement the mission, goals and operation plan through conducting creative and innovative research in different fields of mathematics.

- Ensuring that the Mathematics program complies with the strategic goal is based on the following:
- Establishing a committee for scientific research to promote good practices in research and develop the initiatives for achieving research excellence (see evidence 2.1.9.4)
- Organizing scientific seminars weekly (2.1.9.5)
- Attending to scientific conferences (2.1.9.6)

- Publishing scientific papers see KPIs (2.1.9.7)

Finally, the mathematics Program used the following KPIs to measure its performance in the scientific research see tables (2-3), (2-4) and (2-5).(Report of KPI-P-14, KPI-P-15, KPI-P-16) see (2.1.9.7).

2-1-10 There is a sufficient amount of flexibility and authorities that allows program leadership to bring about the necessary development and changes, in response to the recent events and to the results of periodic evaluation of the program and its courses

The mathematics program makes it possible to make significant changes in the courses or the content (flexibility). The main reason for this approach is ensuring that the Mathematics program is up to date with the new applications that have been developed or current events that have taken place. The current events and developments have to be consistent with national standards.

One of the most important indicators of the flexibility and ability to interact with external changes in the plan that was made to deal with curfew to control COVID-19 virus infection on 14/7/1441 H (8/3/2020 G). The program changed to the mode of distant teaching starting from 16/7/1441 H (10/3/2020 G). Faculty members received extensive workshops to learn how to master Blackboard. Instructors converted all their teaching materials to be usable by distant teaching using Blackboard. The practical parts of the courses were converted to seminars and online group discussion (zoom)(2.1.10.1).

Policies and regulations are regularly updated to reflect UT's new vision and any policy changes are thoroughly discussed before being approved by the University Council. UT makes every effort to be clear about what is deemed acceptable behaviour for all members of the university. The policies, which are publicly available, can be accessed online on the university website. New internal policies and regulations are usually circulated to all members through their emails.

2-1-11 The program management applies mechanisms ensuring integrity, fairness, and equality in all its academic and administrative practices, and between the male and female student sections and branches (if any).

The program management applies many mechanisms to ensure integrity, fairness, and equality in all of its academic and administrative practices as well as between sections which includes;

1/ Defined roles and responsibilities to ensure clear demarcation between functioning units, committees, and positions as well as to facilitate the communication among them (2.1.11.1) and (2.1.11.2)

2/Full coordination between male and female sections regarding all academic and administrative functions. The program management applies by meeting with male and female faculty members to ensure integrity, fairness, and equality in all the around 36-course specifications to agree to unify the curricula, methods of assessment, and all its academic and administrative practice (2.1.11.3, 2.1.11.4,

and 2.1.11.5). The two also take part in planning and developing courses and ensuring that the same materials are used in teaching in the two sections. Male and female staff members usually engage in devising teaching schedules, the content to be covered, and assessment to be used in both sections. Therefore, there are similar course specifications and programs as guided by the course coordinator, who has to ensure harmony in the two courses. Course coordinators for each section compile the report into one to analyse the male and female sections (2.1.11.6).

3/ The integrity among the teaching staff was created through the fair distribution of teaching load and through informing those about any news via the online UT administrative system. Therefore, each one of the teaching staff has the same opportunity to participate.

4/ Performance evaluation of male and female faculty members is done using the same procedure and forms (KPIs report). Most departments have a staff of both genders, which is the reason decisions about academic affairs of the departments involve both genders (2.1.11..4).

Thus, the program management applies many mechanisms to ensure integrity, fairness, and equality in all of its academic and administrative practices between (Male-Female) sections whether on the main campus or branch (Umluj)

2-1-12 The program forms an advisory committee, composed of members of professionals and experts in the program specialization, to contribute to its evaluation, development, and performance improvement.

The advisory committee was formed early during the academic year 1441-42، it was formed by an executive order number 42/052/27486 on 8/5/1442 H from the president of UT (2.1.12.1). The advisory committee was composed of several experts and teaching staff, beneficiaries, students and alumni. Moreover, the advisory committee includes members and graduates from the Mathematics program. They meet and discuss many issues related to evaluating the current program, alumni who work in the field, new things happening in the field, and feedback about alumni (2.1.12.2).

2-1-13 The program management is committed to developing and improving professional skills and capabilities of the supportive technical and administrative staff to keep up with modern developments.)

The mathematics program can be made better by improving technical and administrative staff skills and capabilities. FSUT collaboration with community service and skills development can help in the achievement of this objective. The many training and workshops that the staff members attend have been summarised in (2.1.13.1) and categorised according to departments. It has also been shown the possible benefits of male and female staff attending these training workshops. The community service and skills development plan of UT depends on fitting the administrative staff with many skills such as planning, time management, and leadership excellence(2.1.13.1).

Supportive technical and administrative needs are determined for professional development at the beginning of each year. The Program's management has to ensure that these staffs improve their skills according to modern developments (2.1.13.2)

The strategic plan of FSUT deals with the training of administrative staff in the following parts: Strengthening and developing the capabilities of faculty and staff members. The third strategic goal " supporting and developing the ability of administrative and staff and improve their skills" (2.1.13.3)

2-1-14 The program management provides reliable and publicly disclosed information to the community about the program description, performance, and achievements that suit the needs of the stakeholders.

FSUT makes a variety of resources available to further clarify information about the program to the community. The program has information inside the faculty's handbook (2.1.14.1). The handbook contains all information about the program as administration, courses, and contact information. The guide is distributed by UT to the community. In addition, the website of FSUT provides many information about Mathematics Program and its performance in academic fields as well as its activities towards the community (2.1.14.4)

There is a collection of information from different surveys that may include employer's evaluation program, stakeholder's evaluation of learning outcomes in students and graduates, and stakeholders evaluation of learning outcomes after which the results are documented in (2.1.14.2). The opinions stakeholders have towards the Mathematics program are collected through surveys (2.1.14.3), which could be a part of the publicity of the Mathematics Program.

2-1-15 The program management encourages the developmental initiatives and proposals

The Mathematics program management encourages the initiatives and proposals and supports it through discussions within the relevant committees and/or units with approval from the faculty council. The University of Tabuk implemented many initiatives that were initiated to serve many aspects within the academic field as well as the community. The teaching staff of the mathematics department participated in the preparation of NEOM students for an external scholarship project (2-1-15a, 2-1-15b).

2-1-16 The program implements an effective system to evaluate the performance of leaders, teaching staff, and employees according to clear, published standards and mechanisms that ensure fairness, transparency, and accountability; and the results of the evaluation are used to provide feedback, improvement, and development.

The important value in FSUT is transparency in academic, research performance, and administrative aspects. The faculty policies, rules, and procedures follow transparency in all steps using the higher administration in UT and documented in the task guide for leadership positions in the colleges and supportive deanships at the UT (2.1.16.2). The guides show the activities and responsibilities of faculty management. UT also shows Saudi and non-Saudi nationals' expected conduct, which is

displayed on the university website (2.1.16.5, 2.1.16.6 and 2.1.16.7). The procedure guides also show the teaching activities, tasks, duties, and expected behaviours of the faculty members and administrative staff (2.1.16.8 and 2.1.16.9). These guides may vary considering each department has a departmental guide that has all information (2.1.16.3).

The procedures the mathematics department follows are the same that UT developed to guide employees' performance, staff, and leaders. The evaluation process's objective is to ensure that there are fairness and equality according to the principles of human resources procedures (2.1.16.4). All staff members are evaluated based on the details they fill on UT's evaluation form (2.1.16.10 and 2.1.16.1) at the end of each academic year. The evaluation form has to be signed by the immediate boss to ensure its authenticity after looking at it by the concerned member.

The head of the department is evaluated using **Misbar service** that is provided by the UT for measurement and evaluation for annual self-evaluation of their performances in teaching/learning, research, and community contribution, and their skills by the dean of faculty and teaching staff of the mathematics department. Additionally, all data in regard to the evaluation of managerial responsibilities of program leaders are kept confidential and used by the dean for decision making e.g. changing the head of the department or re-assigning him, and re-assigning of academic and quality vice deans based on the results of performance evaluations (2.1.16.11).

The evaluation process creates a healthy competitive environment important for the professional development of all faculty members.

2-1-17 The program management is committed to activating the values of scientific integrity, intellectual property rights, rules of ethical practices, and proper conduct in all academic, research, administrative, and service fields and activities.

The code of moral conduct of Faculty and Employee provided by UT guides the program management. FSUT values adopted in the strategic plan are Islamic values that include integrity, transparency, and accountability (2.1.17.1). These principles are important in maintaining scientific integrity, ethical practice rules, and intellectual property rights, which the FSUT-designated committee reviewed to ensure that regulations are followed accordingly (2.1.17.5).

In addition, the university believes that having a unified and formal document which outlines a code of moral conduct for students is essential. This document encompasses all the practices and values that the university aspires to, and expects its students to comply with while carrying out their academic and social duties (2.1.17.2).

In addition, The UT is keen on activating the values of scientific integrity, intellectual property rights in all academic, research, administrative, and service fields and activities. At the academic activities level in the mathematics program, students are required to submit work and assignments that are their own. staff members can use the safe-assign service that is provided by **Blackboard**to check for originality of students' work and assignments. In addition, as moral values, students are asked to confirm that their works are their own by writing a statement implying this on the first page (2.1.17.3).

At the administrative activities level in the mathematics program, there is a unified and formal document that outlines all the practices and values that the university aspires to and expects its administrative staff to comply with while carrying out their administrative and social duties(2.1.17.7).

According to academic research, the research ethics is applied to all research conducted at the Mathematics program which is provided by the ministry of higher education (2.1.17.6 Unified Statute For university scientific research). The research ethics committee is supervising the implementation and making sure that all researchers are in compliance with this ethics (2.1.17.5).Also, Staff members can use the**iThenticate**service that is provided by the **Sahel** to check for originality of researcher work and articles. The **iThenticate**is a tool to educate researchers regarding appropriate citation and referencing techniques as well as to provide the academic integrity of researcher work (2.1.17.4)

2-1-18 The program management applies the systems, regulations, and procedures that are approved by the institution/college, including those related to the grievance, complaints, and disciplinary cases.

The program management is committed to applying the mechanism of deprivation, cheating and other procedures related to grievances and complaints that were approved by the Faculty which was driven from the University of Tabuk mechanism and procedures through specific committees. These rules are stated, explained to the new students as well as discussed with them during the student's orientation programs (2.1.18.1). Students are advised to download it from the university and faculty website. All the codes of conduct and regulations for students are clear and can be freely accessed on the university website. This handbook includes all the procedural regulations that students might need to be aware of during their studies (2.1.18.2)

At the staff level, the policies and regulations across different categories in FSUT are driven by UT and the general rules and regulations set by the Ministry of Education. These policies and procedures cover some activities, such as faculty matters, and research, financial affairs. In addition, FSUT and UT follow the general rules and regulations of the Ministry of Human Resources and Social Development regarding Saudi faculty and staff recruitment and promotion. On that basis, UT acts as an agent of the government. The statements of responsibility for administrative positions are specified in the Unified By-Law for Saudi Universities (2.1.18.3). UT has also developed a comprehensive manual outlining the responsibilities of all the major administrative positions within the university, which helps in informing and reminding all staff of these, including new faculty members (2.1.18.4).

Moreover, Staff member's satisfaction level with policies was good as expressed in the annual staff satisfaction survey (2.1.18.5).

2-1-19 The program has adequate financial funding to achieve its mission and goals, along with the existence of mechanisms for prioritizing expenditures.

All financial funding in the faculty of science of the University of Tabuk is made and supervised by the University of Tabuk, which applies all rules of financial support of the Ministry of Education. The mechanisms and priorities of expenditure are made by the Dean and submitted to higher administration of the University of Tabuk for decision following financial regulation of University of Tabuk (2-1-19).

2-2 Program Quality Assurance

The program management implements the Evaluation and Quality Assurance of University Performance program system to identify general quality performance practices and indicators in accordance with the standards of institutional and program accreditation of the Education and Training evaluation Commission.

The Dean is keen on developing policies of measuring and evaluating all academic, administrative, research and community services using suitable KPIs to achieve the vision of the faculty. Everybody in the program tries to implement quality standards in different stages of activity such as planning, implementing, monitoring evaluation and suggestion of improvement activities. All these activities are done in harmony with the quality system of the University of Tabuk that is implemented by the Deanship of Development and Quality such as approving the strategic plan of the Faculty of the science university of Tabuk, program report and course report. This process is highly dynamic and accepts all improvement plans that are compatible with the FSUT mission and policies of the Ministry of Education.

2-2-1 The program management implements an effective quality assurance and management system that is consistent with the institution quality system.

FSUT has committed to the quality management of the Mathematics program. The FSUT established the Vice-Deanship for Development and Quality as part of the administrative hierarchy (Figure 4) to achieve this objective. The Vice-Dean of Development and Quality responsibility is to supervise committees that have been established to develop standards that guide the operating procedures of the mathematics program assessment to ensure that quality goals are achieved, and a similar culture is maintained. The Mathematics program has its own Quality Assurance Manual that is provided to all stakeholders such as students, department members, and administrative staff to understand quality assurance policies and procedures (2.2.1.2).

Faculty members participate in quality management based on the knowledge they acquire from the Quality and Academic Accreditation Unit's performance enhancement committees. They are also encouraged to be creative in teaching, research and community services (for a detailed report of achievement (2.2.1.3) and (2.2.1.6).

The procedures used in the mathematics program are prone to errors and weaknesses that have to be identified using well-defined tools. Evaluation of the student's experiences and the program alumni can be done using surveys after which the results are discussed at the departmental levels to determine possible future improvements as suggested through the UT quality assurance system (2.2.1.4). SSR can also identify errors to identify the strengths and weaknesses of the Mathematics program.

The Quality Assurance and Accreditation Procedures provide that male and female course reports are prepared at the main and the Umluj campus by the end of the semester. The reports are then combined into one file, by the course coordinator. The final report must include the final marks and analysis with comments on grade profiles, the course's learning outcomes, the effectiveness of the teaching and

assessment methods, and evaluation of the student's course to determine areas that need improvements in the future. The course reports submitted to the course coordinator are analysed by the Vice-Dean of Development and Quality (2.2.1.8), followed by developing a completion report that is forwarded to the course coordinator. The course coordinators prepare a course file that includes course specifications based on NCAAA templates and students' activities and assessment, and detailed students' grades (2.2.1.5, 2.2.1.7).

2-2-2 The teaching staff, employee, and students participate in planning, quality assurance, and decision-making processes

Quality management requires the participation of all parties involved at all steps to have an inclusive decision-making process. These aspects are essential in the effective planning and implementation of program goals (2.2.2.1). They can be used to prepare strategic and operational plans for the various activities that different parties have to conduct. Quality management is also crucial in self-assessments and evaluations that can determine the status of the Mathematics program. The approach was used to determine the strategic goals of FSUT by using a SWOT analysis of all participating staff members (2.2.2.2). A strategic plan's success is the involvement of all FSUT parties, including students who are extremely important in the process.

The teaching staff has to prepare course reports at the end of the academic year. The objective is to determine whether the learning outcomes have been achieved based on course learning outcome assessment, course evaluation surveys filled by students, and "Planning for Improvement" used to determine strengths and weaknesses of the plans and the improvements that can be done. The Vice-Dean of Development and Quality uses these points to create the report, which underscores the critical role teaching staff play in developing the plan (2.2.2.4).

Students are essential in evaluating teaching in the Mathematics program based on the course surveys they fill according to their experience and program evaluation (2.2.2.3). The surveys students complete show whether there are sufficient learning resources, thereby providing an inclusive analysis of the Program.

Finally, FSUT's advisory committee formed in 1441-42 through the executive order 42/052/27486 on 8/5/1442 H by the UT president comprised teaching staff, students, mathematics department alumnus, and beneficiaries. The committee meets to discuss the current Program's issues based on the information provided by alumni and current events in the field (2.2.2.1).

2-2-3 The program management approves key performance indicators that accurately measure the program performance and coordinates to provide regular data on them.

Appropriate verification and monitoring methods provide information on the quality of the mathematics program and the courses. The methods used to determine the standard benchmark after which analysis of the courses offered is completed. The self-evaluation surveys used can be determined using the distribution surveys and evidence that can be used to compare the achievement

of goals at different periods. The Mathematics Program prepared at the end of each academic year has detailed data on program performance such as student progress, program completion rates, distribution of grades, evaluation of graduates and their employers, as well as student's courses (2.2.3.1). The report completed is reviewed by the Deanship or Development and Quality (2.2.3.2).

Measuring KPIs is at different stages based on the analysis of the internal and external environment as per the recommendations of NCAAA. KPIs are important as they can determine the quality of the performance program from the university. They can measure the quality of standards, goals, and plans for development in the FSUT strategic plan. Benchmarking can be used to determine the status of the Mathematics program compared to similar programs. Internal benchmarking compares recent KPI results with previous academic years and external benchmarking with King Khaled's university mathematics program ((see KPIs report (2.2.3.3)).

2-2-4 The program analyses the evaluation data annually (e.g., performance indicators and benchmarking data, student progress, program completion rates, student evaluations of the program, courses and services, views of graduates and employers); and results are used in planning, development, and decision-making processes.

The program report analyses the evaluation data regularly year and the results of data analysis are used in planning for improvements and decision making. These data came from many sources including the course completion rates, program completion/cohort analysis, first and recently 2nd-year completion rates, progress test, learning outcomes assessment, KPIs data with internal and external comparisons, employment rate as well as many surveys conducted regularly for students, staff, graduates and employers(2.2.4.1).

Program completion/cohort analysis

Program completion rate in the minimum time is the proportion of undergraduate students who completed the program in a minimum time of the number that started the program in their admission, with their analysis of results as well as the causes of low completion rate were identified. The suggestion of improvements was made based on the identified causes and the same measures taken for improvements followed by reassessment of any progress made over time based on these actions (see evidence 2.2.4.2).

First (and recently 2nd) year completion rates

The completion rate of the 2nd year was calculated in comparison with previous year rate annually and recently the first year has been introduced in this calculation based on the recommendation of NCAAA.

Assessment of course Learning outcomes (CLOs assessment)

CLOs assessment is done for almost all courses, the results of students' achievements in different CLOs were used for improvement at the course level (Program specification 2.2.4.2).

Assessment of Program learning outcomes PLO

Assessment and analysis of student's achievements of PLOs were done using various sources of data including alumni and employer surveys 2.2.4.2**.**

Students Surveys

There are four types of students surveys running regularly over the last 4 years to evaluate the quality of program/courses from students perspective at different points including:

- Course evaluation students at the end of each course (course evaluation students Report of CES 2.2.4.1).
- Student Experience Survey at the midpoint of the program (Student Experience Report 2.2.4.1).
- Program Evaluation Survey at the end of the program (Program Evaluation Survey Report 2.2.4.1).
- Alumni Evaluation Survey at the end of the program (Alumni Evaluation Survey report 2.2.4.1)

Results of all the above-mentioned 4 types of students surveys were analysed, processed and a report was prepared for each type and the results were utilized in the identification of the strong and weak aspects of the courses/program to suggest actions for improvement e.g. modification of teaching methods.

Data of KPIs

The defined program KPIs are submitted for analysis with comparisons, either internally or externally. A full report of program KPIs is established for the last two years and used for identification of weaknesses followed by decisions for improvement (Report of KPIs(2.2.4.4))

The Deanship of Development and Quality reviews the program report and discusses introduced recommendations to improve the mathematics program's performance in the same report. The results of last year's assessment provided important KPIs, surveys, and goals that could be implemented to improve performance in the current year (2.2.4.3).

2-2-5 The program conducts a periodic, comprehensive evaluation (every three / five years) and prepares reports about the overall level of quality, with the identification of points of strength and weakness; plans for improvement; and follows up its implementation.

The Mathematics Program development is an ongoing and recursive process, where every 5 years the Mathematics Program conducts a comprehensive program review and deliberation, which might lead to major or minor program modifications (2.2.5.2). The approval and implementation of any modifications are conducted using the university templates, forms, policies and procedures (2.2.5.1).

Finally, the preparation of SSR for Mathematics Program involves extensive study of all aspects of Mathematics Program with identification of points of strength and weakness. SSRP also consists of the implementation of improvement plans.

The procedures and time scales for improving and revising Mathematics Program follows the scheme implemented by the University of Tabuk (Table 2.4)

Table 2.4 : The quality assurance and accreditation procedures at the programs levels.

Activity Name	Start of Semester	End of Semester	Annually	Bi-annual	Every 5 years
Program Specification Review					√
Course Evaluation Surveys		√			
Course Report		√			
Course Recommendation	√	√			√
Course File		√			
Employer Evaluation Survey			√		
Alumni Evaluation Survey			√		
External Program Assessment				√	
Program SWOT Analysis					√
Program KPI Report and Analysis			√		
Annual Program Report			√		
Annual Program Report Revision			√		
Recommendations Conclusion			√		
Program Self Study Report					√

Student Evaluation Surveys		√			

C. Overall Evaluation for Quality of the Standard:

NCAAA KPI Reference Number: KPI-P-11 **Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program.**					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmarking**
Main	**16:1**	**15:1**	**17:1**	**14:1**	**13:1**
Umluj	**39:1**	**35:1**	**38:1**	**35:1**	

Table: (2-1): Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program.

Analysis

According to international standards, the actual value of this KPI, the main campus, is quite adequate and it is comparable to the corresponding value at KKU. To sustain the stability of this value of the KPI in the coming years, the mathematics program is taking all the necessary action to retain its faculty members as well as recruiting new members to substitute those who retire or leave the program. At Umluj campus there is a shortage in faculty members compared to the number of students enrolled in the program, this situation results in an increase in the workload and consequently decrease in students satisfaction with the academic advising as well as a decrease in research production. To rectify this issue as an urgent solution the mathematics program has adopted online teaching for some courses which will allow faculty members at main campus to carry some teaching load at Umluj branch. Also the mathematics program has 13 (5 males and 8 females) scholarship students specialized in different areas of mathematics that are studying overseas and are expected to join the program during the coming 4 years, which will be enough to fill in the recent shortage in the number of faculty members at Umluj campus.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the percentage of teaching staff distribution at all branches over all ranks for both genders.

2. How was the benchmark calculated?

Ratio of the total number of students to the total number of full-time faculty members.

3. Name of the internal benchmark provider?

The programs and study plans committee

4. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

5. Name of the external benchmark provider

King Khalid University (KKU)

	NCAAA KPI Reference Number: KPI-P-12 Percentage of teaching staff distribution based on: a. Gender. b. Branches. c. Academic Ranking.								
	Actual Benchmark		Target Benchmark		Internal Benchmark		New Target Benchmark		External Benchmarking
	Main	Umluj	Main	Umluj	Main	Umluj	Main	Umluj	
M	58.2%	42.9%	50%	50%	64.7%	42.9%	%50	%50	69%
F	41.8%	57.1%	50%	50%	35.3%	57.1%	%50	%50	21%
Prof.	3.6%	7.1%	5%	10%	2%	7.1%	%5	%10	8.1%
Assoc.	14.5%	7.1%	20%	10%	17.6%	7.1%	%20	%20	30.7%
Assis.	52.7%	50%	50%	60%	53.4%	50%	%60	%60	54.8%
Lect.	3.6%	7.1%	15%	10%	3.6%	7.1%	%0	%5	4.8%
Demo.	25.4%	28.5%	10%	10%	25.4%	28.5%	%5	%5	1.6%

Table: (2-2). Percentage of teaching staff

Analysis

Table 2.2, shows Percentage of teaching staff distribution across the main and Umloj campuses. The total number of students in the main campus is 812 students and at Umluj is 578 but there is a huge difference in the number of faculty members. The number of associate professors at umluj campus is quite low which will have a negative impact on the quality and productivity of research, also the lack of lecturers and demonstrators negatively affect the teaching performance and teaching strategies. The majority of applicants to advertised faculty positions prefer to locate in big cities where all the quality public services are available. Fortunately the whole area is witnessing the establishment of the promising Neom project which is planned to provide the latest technologies and infrastructure to the whole Tabuk province and make it a classworld tourist destination. Therefore, in the coming years vacancies at Umulj campus are expected to be in high demand. Beside that the mathematics program has about 13 (5 males and 8 females) scholarship students specialized in different areas of mathematics that are studying overseas and are expected to join the program during the coming 4 years. Which will be enough to fill in the recent shortage in the number of faculty members at Umluj campus.

The comparison between the actual and internal benchmarks shows a slight decrease in the number of assistant and associate professors at main campus because 1.5% of assistant and associate professors have left the program. At the same time some faculty members have been nominated to full professor rank which results in the increase of the percentage of full professor from 2% to 3.6%,. The percentage of female faculty members at the mathematica program 41.8% at main campus and 57.1 at Umlug campus which are both quite higher than the external benchmark 21%, this fact reflects the high level of commitment of the mathematics program to its core values of gender equity and fairness. The reason that the benchmark percentage of full and associate professors is higher than the corresponding percentage at the mathematics program is because the mathematics program at KKU has been established more than three decades before the mathematics program at UT, which gives KKU more opportunities for establishing structured relations with distinguished national and international scholars. The percentage of demonstrators at the mathematics program is about 23% higher than the external benchmark is the outcome of the mathematics department policy of opening more opportunities and support for junior mathematicians. Due to the efforts the mathematics program is putting to encourage research activities more faculty members have already applied for full professorship and associate professor ranks which will lead to increase in the percentage faculty members at these ranks in the coming year, also mathematics program regularly promotes lecturer and demonstrators to pursue higher education leading to PhD and MSc respectively, thus we expect an increase in the percentage of faculty members at higher ranks next academic year.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Provide Umluj campus with all the learning and research resources and facilities as well as all the needed services.
3. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the percentage of teaching staff distribution at all branches over all ranks for both genders.

2. How was the benchmark calculated?

At each branch Number of teaching staff at each rank/gender divided by the total number of teaching staff multiplied by 100.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

NCAAA KPI Reference Number: KPI-P-14

Description:

Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark

Main	51%	60%	50%	70%	95 %
Umluj	15%	20%	10%	20%	

Table (2-3): Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program.

Analysis:

The average percentage of full-time faculty members who published at least one research during the previous year is 51%. In the calculation of this KPI all the teaching staff including lecturer are included. That's why the value of the KPI seems to be lower than the external benchmark and slightly higher than the internal benchmark if lecturer are excluded the value of the KPI will be over 90%. The mathematics program provides an appropriate supportive environment for faculty members that encourage research and professional development, where faculty members are encouraged to attend various training workshops as well as get the opportunity to present their research work in the weekly seminar held by the department. At the end of each academic year outstanding faculty members in teaching and research get certificates of excellence in research and teaching as well. Also in order to encourage research production, every academic year UT offers generous research fund opportunities for all faculty members at UT.

The data shows that the percentage of full-time faculty members who published at least one research during this year at the main campus is higher than umluj campus that is due to the lack of adequate research resources at umluj campus, also the shortage in teaching staff at Umluj campus results in increasing the workload of faculty members which in turns results in a negative impact on their research productivity. In comparison to the external benchmark the citation rate at the main campus is quite adequate, considering the fact that the mathematics program at KKU was established decades before the mathematics program at UT, we infer the amount of efforts the mathematics program as well as UT are putting in encouraging research activities and providing adequate environment to conduct research, also reflects the commitment of faculty members to be involved in research activities.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Provide Umluj campus with all the learning and research resources and facilities as well as all the needed services.

3. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.
4. Develop and implement a special training program for lecturers to enhance their research skills.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the Percentage of full-time faculty members who published at least one research

2. How was the benchmark calculated?

Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program.

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

NCAAA KPI Reference Number: KPI-P-15

Description:

The average number of refereed and/or published research per faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year).

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	0.5:1	1:1	0.5:1	1:1	5:1
Umluj	0.2:1	0.5:1	1:1	1:1	

Table (2-4): Rate of published research per faculty member.

Analysis:

The average number of referred or published research per faculty member for the mathematics program is 0.5:1 which. In the calculation of this KPI all the teaching staff including lecturer are included. That's why the value of the KPI seems to be lower than the external benchmark and slightly higher than the internal benchmark if lecturer are excluded the value of the KPI will be over 3 publications per faculty member. The mathematics program provides an appropriate supportive environment for faculty members that encourage research and professional development, where faculty members are encouraged to attend various training workshops as well as get the opportunity to present their research work in the weekly seminar held by the department. At the end of each academic year outstanding faculty members in teaching and research get certificates of excellence in research and teaching as well. Also in order to encourage research production, every academic year UT offers generous research fund opportunities for all faculty members at UT.

The data shows that the percentage of full-time faculty members who published at least one research during this year at the main campus is higher than umluj campus that is due to the lack of adequate research resources at umluj campus, also the shortage in teaching staff at Umluj campus results in increasing the workload of faculty members which in turns results in a negative impact on their research productivity. In comparison to the external benchmark the citation rate at the main campus is quite adequate, considering the fact that the mathematics program at KKU was established decades before the mathematics program at UT, we infer the amount of efforts the mathematics program as well as UT are putting in encouraging research activities and providing adequate environment to conduct research, also reflects the commitment of faculty members to be involved in research activities.

Recommendations:

1. The mathematics program should encourage research activities at Umluj campus as well as all other sites.
2. The mathematics program should have a plan in place to retain the current staff members especially those who are active in research.
3. The mathematics program should recruit more faculty members at UMluj campus that have a high research profile.
4. The program should provide more professional training in research for all members, especially at Umloj Campus.
5. Develop and implement a special training program for lecturers to enhance their research skills.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the average number of refereed and/or published research per faculty member during the year

2. How was the benchmark calculated?

The total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

NCAAA KPI Reference Number: KPI-P-16

Description:

The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	21:1	30:1	17:1	30:1	25:1
Umluj	10:1	10:1	8:1	15:1	

Table (2-5) : The average number of citations in refereed journals from published research per faculty member in the program

Analysis:

Citations rate in refereed journals per faculty member at the main campus is higher than Umluj campus, the main underlying reason is the lack of adequate research resources at umluj campus, as well as the shortage in teaching staff at Umluj campus which in turns results in increasing the workload of faculty members and consequently results in a reduction in the number and quality of their research production. In comparison to the external benchmark the citation rate at the main campus is quite adequate, considering the fact that the mathematics program at KKU was established decades before the mathematics program at UT, we infer the amount of efforts the mathematics program as well as UT are putting in encouraging research activities and providing adequate environment to conduct research, also reflects the commitment of faculty members to produce high quality research.

On the other hand, at the female section more needs to be done to encourage faculty members to consider producing high quality research work. At Umloj campus the program must have a special plan to get faculty members involved in research work.

Recommendations:

1. The mathematics program should encourage research activities at Umluj campus as well as all other sites.
2. The mathematics program should have a plan in place to retain the current staff members especially those who are active in research.
3. The mathematics program should recruit more faculty members at Umluj campus that have a high research profile.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure beneficiaries satisfaction with the adequacy and diversity of learning resources (references, journals, database etc.).

2. How was the benchmark calculated?

The average number of citations in the previous year in refereed journals from published research divided by the total number of full time faculty members.

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Strengths:

1. Good organizational climate and supportive academic environment.
2. High integrity, fairness, and equality in all its academic and administrative practices, and between the male and female student sections.
3. The program management applies the systems, regulations, and procedures that are approved by the institution/Faculty in order to close the loop

Areas for Improvement:

1. The program management implements and monitors its role in the community partnership plan of the institution through specific performance indicators.
2. The program may enhance the performance of the advisory committee at the faculty level and build another one at the department level to contribute more to its evaluation, development, and performance improvement
3. The program should make more active use of the evaluation results in planning, development, and decision-making processes.
4. The program should increase the involvement of employee, and students in planning.

Priorities for Improvement:

1. Use the results of evaluation data in planning, development, and decision-making processes.

2. The program may build an advisory committee at the department level which includes different stakeholders to contribute to the development, and performance improvement of the program.

3. The program management implement and monitor its role in the community partnership plan of the institution through specific performance indicators

A. A brief realistic and objective presentation of the present status of the program with respect to Teaching and Learning.

In the mathematics program, student learning outcomes, curriculum assessment and teaching strategies and graduate attributes are all clearly specified, consistent with the National Qualifications Framework and with the requirement of local professional bodies. Regarding students teaching and learning the Mathematics Program has a well-established quality assurance system that guarantees all its functions are planned, executed, monitored and continuously improving. Also the Mathematics program offers its students a unique teaching and learning environment that fosters their intellectual abilities and provides them with opportunities to develop their talents and practice their extra-curricular activities. Teaching and learning qualities are a continuous process.

A description of the process for the preparation on this standard:

1. The Teaching and Learning Committee was formed from members from both the male and female faculties. The committee is responsible for writing standards 3, 4 and 5.

2. Standard-3 requirements were defined by utilizing NCAAA related documents.

3. The committee for standard 3 investigated the following documents:

- Program and course specifications.
- Program and courses reports.
- Courses evaluation surveys.
- Students experience surveys.
- Program evaluation surveys.
- Alumni evaluation surveys.
- Stakeholders evaluation surveys.
- All regulations and bylaws that regulate students grading, academic progress, academic guidance, students violation and students' grievances and their right to appeal.

4. The first draft of the self-evaluation report of standard 3 is prepared.

5. Feedback and recommendations from the review report (from Development and Quality vice-agency at UT) were used to refine and evolve the recommendations in the final report.

6. After the cycles of reviews, the SSR report was ready.

B. Report on Sub-standards:
(Provide an analytical and critical report about the evaluation results of each sub-standard based on required data, evidence, and KPIs).

3-1 Graduate Attributes and Learning Outcomes

3-1-1 The program identifies its graduate attributes and intended learning outcomes that are consistent with its mission, and aligned with the graduate attributes at the institutional level; and they are approved, publicly disclosed, and periodically reviewed.

The Mathematics Program learning outcomes are well described in the program specifications according to the forms developed by the National Centre for Academic Accreditation and Evaluation (NCAAA). The graduate attributes were approved at the 20th department council on 7/08/1442 H. They are publicly disclosed at the department website. The Mathematics Program learning outcomes and graduate attributes are revised every five years to enhance the quality and efficiency of the program. The feedback from students, alumni and employers beside course reports are the major part in this process.

An Advisory committee for the Faculty of Science was formed (3-1-1-2) to discuss relevant issues concerning the attributes of graduates and its compatibility with the academic level set by the NQF, professional and labour market requirements. The advisory committee is also responsible for approval of any modification of the graduate attributes. The proposed graduate attributes must have the approval of most of the advisory committee members before final approval by the department council (3-1-1-1). In addition they must be clearly connected with the learning goals of the mathematics program and the graduate attributes identified by the NQF for the Bachelor degree program.

The Mathematics Program specifications specifies the aim for which its students are prepared by focusing on six graduate attributes which are:

- Knowledge in the various branches of mathematics.
- Use of scientific and analytical thinking and drawing conclusions.
- Digital capability.
- Constructive interaction with colleagues and faculty members of the program.
- Commitment to professional values and ethics.
- Responsibility towards serving the community.

The mathematics program promotes mathematical skills and knowledge through well-designed students learning outcomes that are clearly specified and consistent with the National professional bodies, The National Qualifications Framework and The National Commission for Academic Accreditation & Assessment (NCAAA). The Mathematics Program has five major learning domains, Knowledge, cognitive, interpersonal skills, Communication, Information Technology, Numerical and Psychomotor associated with these domains are a set of major learning outcomes which are demonstrated through the program specifications. The National Qualification Framework provides five learning domains where the matching table of the learning outcomes which arose from the graduate attributes can be found at the program specifications (3-1-1-2). In addition, the consistency with the program goals is presented in the following table 3.1.1:

Table3.1.1: Alignment between Mathematics program mission and the graduates attributes .

Graduate attributes	Program mission components		
	Education	Research	Community
Knowledge in the various branches of mathematics.	✓		
Use of scientific and analytical thinking and drawing conclusions.	✓	✓	
Digital capability.	✓		
Constructive interaction with colleagues and faculty members of the program.	✓		
Commitment to professional values and ethics.	✓		
Responsibility towards serving the community.			✓

3-1-2 The graduate attributes and learning outcomes are consistent with the requirements of the National Qualifications Framework and with academic, professional, and labor market requirements.

Consistency with the NQF Policies: The National Qualification Framework (NQF) stipulates that graduates at higher educational institutions in KSA are expected to demonstrate arrangement of attributes and learning outcomes. The graduate attributes as well as the learning outcomes of the mathematics program are in line with the requirement of the NQF as shown in (3-1-2-1) and table 3.1.2.

Table 3.1.2: Graduates attributes of the mathematics program are aligned with the NQF:

Mathematics Program graduate attributes	NQF graduates attributes
Knowledge in the various branches of mathematics.	Knowledge of a comprehensive, coherent and systematic body of knowledge in a field of

	enquiry and of the underlying theories and principles associated with it.
Use of scientific and analytical thinking and drawing conclusions.	The ability to investigate complex problems and develop creative solutions with limited guidance using insights from their own and other related fields of study.
	The ability to identify and use appropriate mathematical and statistical techniques in the analysis and resolution of complex issues, and select and use the most appropriate mechanisms for communicating the results to a variety of audiences.
	Apply the theoretical insights and methods of inquiry from their field of study in considering issues and problems in other contexts.
Constructive interaction with colleagues and faculty members of the program.	The capacity to provide leadership and willingness to fully cooperate with others in joint projects and initiatives.
	Take initiative in identifying and resolving issues and problems both individually and in group situations, exercising leadership in pursuit of innovative and practical solutions.
Commitment to professional values and ethics	Consistently demonstrate a high level of ethical and responsible behavior and provide leadership in academic professional and community environments.
Responsibility towards serving the community.	Behave in ways that are consistent with Islamic values and beliefs and reflect high levels of loyalty, responsibility and commitment to serve the community.

3-1-4 The program applies appropriate mechanisms and tools for measuring the graduate attributes and learning outcomes, and verifying their achievement according to specific performance levels and assessment plans.

Mathematics Program assessed the achievement of performance of graduates attributes and learning outcomes through the following KPIs:

- KPI-P-03 Students evaluation of the quality of learning experience in the program.
- KPI-P-04 Completion rate.
- KPI-P-05 First-year students retention rate.
- KPI-P-06 Students' performance in the professional and/or national examinations.
- KPI-P-07 Graduates employability and enrolment in postgraduate programs.
- KPI-P-08 Average number of students in the class.

- KPI-P-09 Employers' evaluation of the program graduates proficiency.

The assessment plan for these KPIs is presented in (3-1-4-1), while (3-1-4-2) contains the most recent assessment reports of the mathematics program learning outcomes. Also relevant findings can be found at summary of KPIs and benchmark, see KPIs report for more details. The Mathematics Program uses both direct and indirect methods for assessment of learning outcomes. The direct methods include measuring the learning outcomes of specific courses as stated in the program specifications. The program learning outcomes in turn connected to the graduates attributes via the mapping matrix presented in table 3.1.4. Indirect methods include surveys for learning outcomes, which are distributed to stakeholders and graduates.

Table 3.1.4: Relation between Mathematics program learning outcomes, the program goals and graduate attributes.

	Mathematic Program learning outcomes	Mathematic Program's goals						Graduate attributes					
		1	2	3	4	5	6	1	2	3	4	5	6
1.0	**Knowledge**												
1.1	Recall the fundamental theories and concepts of mathematical science.	✓	✓	✓				✓		✓			
1.2	Recognize the utilization of mathematics in other fields.	✓	✓	✓				✓		✓	✓		
2.0	**Cognitive Skills**												
2.1	Analyze problems in advanced areas of mathematics using analytic and computational methods.	✓	✓	✓	✓			✓	✓	✓			
2.2	Prove theorems using the language of mathematics	✓	✓	✓	✓			✓		✓			
2.3	Apply knowledge of mathematical principles, theories and procedures in real life and scientific domains.	✓	✓	✓	✓			✓	✓	✓			✓
2.4	Demonstrate rigorous reasoning, critical thinking and problem solving skills.	✓	✓	✓	✓			✓	✓	✓			
3.0	**Interpersonal Skills & Responsibility**												
3.1	Perform research individually and in conjunction with others.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓
3.2	Manage duty, and time with other members of the group.	✓	✓	✓	✓	✓	✓				✓	✓	✓
3.3	Demonstrate ability of presentation skills.	✓	✓	✓	✓	✓	✓		✓	✓	✓		
4.0	**Communication, Information Technology, Numerical**												
4.1	Communicate mathematical ideas with clarity and coherence, both written and verbally.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
4.2	Demonstrate mathematical problems by mathematical packages.	✓	✓	✓	✓	✓	✓	✓	✓	✓			

3-2 Curriculum

3-2-1 The program is committed to the institutional policies, standards, and procedures in the design, development and modification of the curriculum.

Curricula at all levels need to shape critical, capable, knowledgeable, skilled graduates who are able to contribute in the development of the local community. The Mathematics Program Curriculum and program committee which is responsible for handling curricular matters is committed to maintain the Program's position at the forefront of higher education through high quality curriculum. The Mathematics Program follows the UT policies and procedures (3-2-1-1) and authority matrix (3-2-1-2) which shows the levels for approval of program modifications. In the design, development and modification of the curriculum as well as all the relevant forms.
The curriculum of the mathematics program was approved by the UT council (3-2-1-3).

3-2-2 The curriculum design considers fulfilling the program goals and learning outcomes, and the educational, scientific, technical and professional developments in the field of specialization; and is periodically reviewed.

The programs and study plans committee is the responsible body to carry out any minor or major modification in the program, the committee formation letter is presented in (3-2-2-1). The mathematics program curriculum development process goes through the four major phases as shown in figure 3.2.2:

Phase 1: Planning

During this curriculum development phase the programs and study plans committee has done research collected and analysed data regarding:

1- Issues and trends of mathematics education at the local area and nationwide. Identifying key issues and trends allows the programs and study plans committee to design an appropriate Curriculum that is responsive to the needs of the students, the local community and the professional bodies.

2- Resources that can be provided to implement the curriculum.

3- Policies and guidelines from the Faculty, University and national education and accreditation bodies.

The data sources include exam papers, assignments, lecture notes, text books, surveys of students, faculty members, professional bodies and the local community. The work done on this phase will inform the curriculum development.

Phase 2: Developing

During this curriculum development phase the committee has reviewed decided on the following:

1- **Learning Outcomes:** Identify what appropriate learning outcomes students should be acquired by the end of the program.

2- **Contents:** Refer to instructional materials and resources needed to facilitate an effective learning experience.
3- **Learning experience:** Refer to all the activities devised for learners to reinforce learning.
4- **Sequence of learning experience:** How the learning experiences should be organised to ensure effectiveness of instructions.

Decisions made by the program and study plans committee about curriculum objectives and outcomes are then to be discussed at the department council.

Phase 3: Implementation

After a new modification has been approved to commence it should be executed in no more than 12 months.

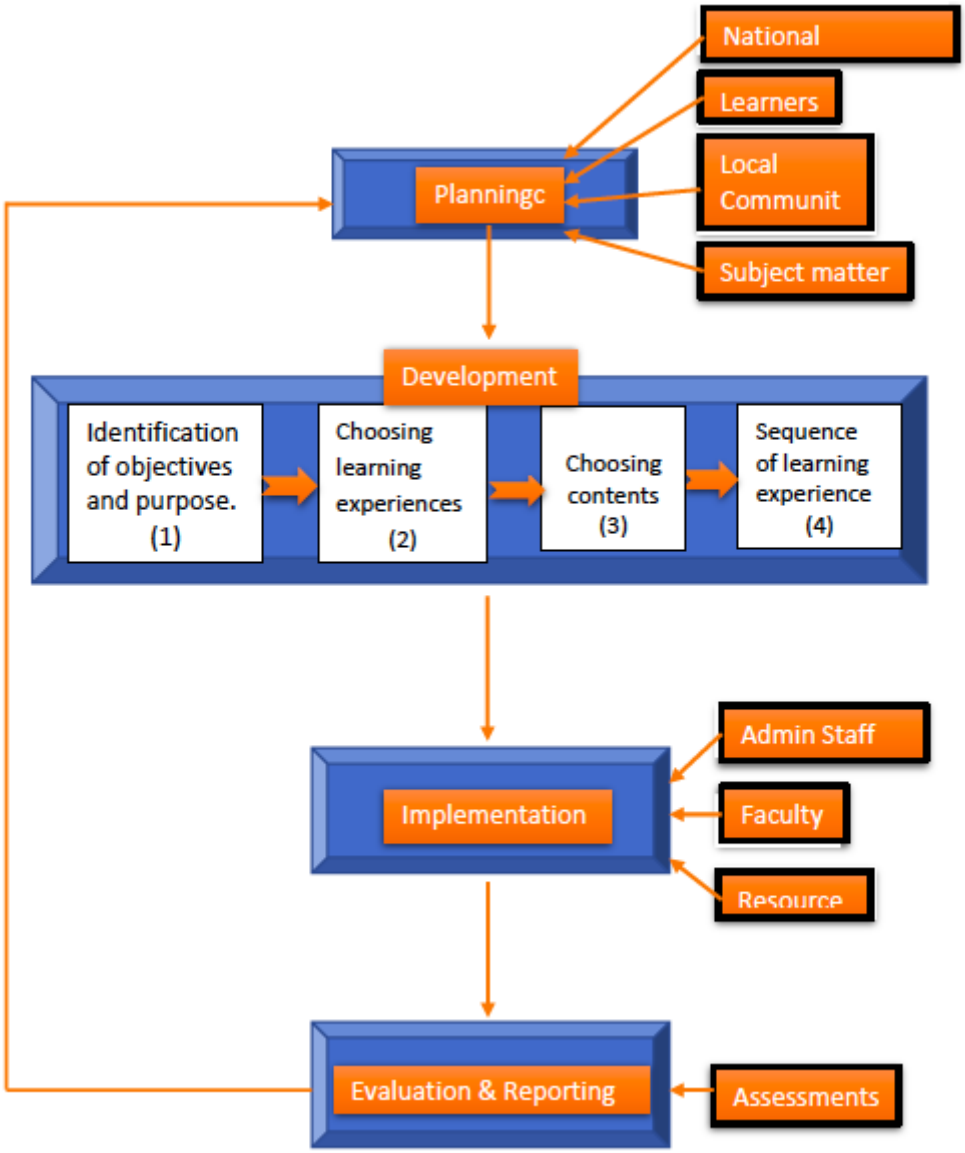
Phase 4: Evaluation and Reporting

During this curriculum development phase the programs and study plans committee discusses and makes decisions about the appropriateness of the following elements:

Outcomes Assessment: What kinds of tasks will reveal the effectiveness of the learning experience and the extent to which the educational outcomes being realized?

In (3-2-2-1) a letter from the deanship of quality identifying the components that needs to be reviewed by the different programs at TU.

Figure 3.2.2: The curriculum development model followed by the Mathematics Program is based on the following stage.



3-2-3 The study plan ensures the balance between the general and specialty requirements, and between theoretical and applied aspects; and it takes into account the sequencing and integration of the courses.*

The curriculum of the Mathematics Program not only meets the standard of attributes set by the NCAAA but also ensures the balance between the general and speciality requirements as well as between pure and applied aspects. Pages 8,9;10 of the program specification (3-2-3-1) shows the wide range of general courses as well as the set of pure and applied mathematics courses. The majority of the general courses are delivered in the first and second years of the program, these courses equip students with the basic knowledge of mathematics. At the advanced levels the curriculum contains a range of pure and applied mathematical courses that open opportunities for students to pursue their postgraduate studies in either pure or applied mathematics.

The Bachelor of Mathematics requires the successful completion of 132 credit hours distributed across the courses provided by the program as well as the capstone project in the final year. The distribution of 132 credit units required for the B.Sc. degree in the Mathematics Program.

3-2-6 The curriculum includes integrated curricular and extracurricular activities that contribute to the achievement of the program learning outcomes.

The program gives the opportunity to students to participate in both curricular and extracurricular activities, which is managed and monitored by the students activities committee (3-2-6-1). At the beginning of each year a plan is made by the deanship of student affairs and FSUT for both male and female students about participation in different activities (3-2-6-2) such as participation in different sports, art, photography and others, The folder (3-2-6-3) contains samples of extracurricular activities announcements. In addition, the plan contains many activities that are conducted outside UT. A detailed report about students' extracurricular activities is available at (3-2-6-4). All the extracurricular activities contribute in some way to enhancing the learning environment and hence has a positive impact in achieving the program learning outcomes.

3-2-7 The learning outcomes in the courses are aligned with the program learning outcomes (e.g., Matrix for the alignment of the learning outcomes of the courses with program learning outcomes).*

The mathematics program specifications contain five major domains. Online courses learning outcomes are also divided into five major domains. However, according to the nature of the course, some courses contain some of those major domains. In the program specifications, the learning outcomes of individual courses are aligned with the program learning outcomes with three different types of professionalism and indicated as introductory (I), proficient (P) and advanced (A) as shown in pages 15,16;17 (3-2-7).

Courses/Learning domains	1000	1011	2000	2003	2004	2041	2511	2611	3005	3007	3111	3112	3222	3332	3333	3334
Knowledge																
1.1	I	I	P	P	I	I	I	I	P	P	P	A	P	P	P	I
1.2			I	I	I	I	I	I	P	P		P	A	A	P	P
Cognitive																
2.1						P	P		P	P	P	A	P	P	P	P
2.2		I	I	I		I	I	I	I	I	P	A				P
2.3					I				P	I			A	A	P	P
2.4	I						P	I	P	P	P	P	P	P		P
Interpersonal skills and responsibility																
3.1			I	I	I	I	I	I	P	P	P	P	P	P	P	P
3.2	I	I	I		I		I									
3.3															I	
Communication, information technology ; Numerical																
4.1			I	I	I	I	I	I	I	P	P	P	P	P		P
4.2															P	P

Courses/Learning domains	340	342	343	344	346	406	408	413	414	415	416	427	434	445	462	463	464	465	481	491
Knowledge																				
1.1	I	P	A	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	P	A
1.2	P			A	P	P	P		P				P		P				P	A
Cognitive																				
2.1	P	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
2.2		P	A	A	A	P	P	P	A	A	A	A	A	A	A	A	A	A	P	A
2.3	P								P				P		P				P	A
2.4	I	P	A	A	P	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A
Interpersonal skills and responsibility																				
3.1	I	I	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
3.2																				A
3.3						P													P	A
Communication, information technology ;Numerical																				
4.1	I	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
4.2	P																			A

3-2-8 Teaching and learning strategies and assessment methods are aligned with the intended learning outcomes at the program and course levels.

At the program level, the teaching and learning strategies and assessment methods are aligned with learning outcomes of the Math Program as presented in the program specification (3-2-8-1) page 14. Math Program learning outcomes are assessed according to the assessment plan. The results of the assessment are represented in the report of assessment of program learning outcome (3-2-8-2). As shown in Table 3.2.8.1 the teaching strategies and assessment methods vary according to the learning domain and hence according to the intended learning outcome.

Table 3.2.8.1: Alignment between the program learning outcomes and the teaching strategies.

Table 1	NQF Learning Domains and Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Recall the fundamental theories and concepts of mathematical science.	-Lectures (Define and explain mathematical concepts and theories) -Self-Learning -Research activities.	-Written Exams. -Periodic Quizzes. -Assignments. -Home works. -Conceptual MCQs
1.2	Recognize the utilization of mathematics in other fields.		
2.0	**Cognitive Skills**		
2.1	Analyze problems in advanced areas of mathematics using analytic and computational methods.	-Lectures (Demonstrate problem-solving, text problems, scenarios) -Small group discussion. -Case studies.	-Final exam -Home works -Midterm Exams -Periodic Quizzes -Assignments
2.2	Prove theorems using the language of mathematics		
2.3	Apply knowledge of mathematical principles, theories and procedures in real life and scientific domains.		
2.4	Demonstrate rigorous reasoning, critical thinking and problem solving skills.		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Perform research individually and in conjunction with others.	-Interactive group work. -Discussion groups. -In-class participation. -Research activities.	-Group assignments. -Essays. -Projects. -Reports.
3.2	Manage duty, and time with other members of the group		
3.3	Demonstrate ability of presentation skills.		
4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate mathematical ideas with clarity and coherence, both written and verbally.	-Discussion groups. -Seminars. -Research activities	-Oral or written exams. -Presentations.
4.2	Demonstrate mathematical problems by mathematical packaging.	-Computer lab based tutorials.	-Computer based assignments. -Computer based exams. -Web based essays.
5.0	**Psychomotor**		
5.1	NA		

At the course level, the teaching and learning strategies and assessment methods are aligned with the program learning outcomes as indicated in the course's specifications; a sample of course specifications are available in (3-2-8-3).

Table 3.2.8.2: Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy for MATH 464 course.

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	New theories and concepts of general topology.	- Lectures - Self-Learning - Free discussion	- Quizzes -Assignments -Midterm exams - Final exam
1.2	Acquire knowledge and understanding of the basics of mathematical ideas, including the concepts of rigorous argument and formal proof, and an appreciation of the power and generality of abstract formulation and the analytic method.		
2.0	**Cognitive Skills**		
2.1	Students will be able to develop their capacity to learn and apply mathematical ideas and skills.	-Groupwork (workshop, cooperative learning) - Case Study - Brainstorming	- Quizzes -Assignments -Midterm exams - Final exam
2.2	Students will be able to take the experience of advanced mathematical results, methods, ideas and thinking		
2.3	Students will be able to apply and use the theories in solving problems.		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Take responsibility for individual and collective.	- Solve problems - Cooperative learning and teamwork - e-learning - Role playing	-Control working group (teamwork) -Evaluate the membership group -Self evaluation
3.2	- Committed to prevailing community values.		

4.0	**Communication, Information Technology, Numerical**		
4.1	- Uses an electronic learning resources, and educational sites on the Internet related to course	- Solve problems - Case Study - E-learning	-Final and periodic exams - Evaluation of research projects -Class participation
5.0	**Psychomotor**		
	Not applicable		

Table 3.2.8.3: Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy for MATH 491 course.

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Recall the fundamental theories and concepts presented in the project.	Introducing ideas. Active discussion of ideas.	Discussion in the lectures.
1.2	Recognize the importance of the methods and techniques learned in solving practical problems.	Introducing ideas through case study.	Homework. Assignment.
2.0	**Cognitive Skills**		
2.1	Analyze problems using analytical and computational techniques.	Lectures, Class discussions.	Quizzes. Homework. Assignment.
2.2	Prove mathematical theorems present in the project.	Lectures, Class discussions	Quizzes. Homework. Assignment.

2.3	Apply the different methods and techniques learned to solve real world problems.	Lectures, Class discussions	Quizzes. Homework. Assignment.
2.4	Demonstrate critical thinking and problem solving skills.	Lectures, Class discussions	Quizzes. Homework. Assignment.
3.0	**Interpersonal Skills & Responsibility**		
3.1	Demonstrate ability to work individually and in collaboration with others.	Discussion Group. Class Discussion.	Homework. Assignment.
3.2	Demonstrate efficiency in managing duties and time.	Assign tasks to students to work on their own.	Homework. Assignment.
4.0	**Communication, Information Technology, Numerical**		
4.1	Illustrate effective communication with Peers, and Lectures.	Class discussion. Presentation.	Presentation. Project defence
4.2	Demonstrate Proficiency in using computer packages in solving mathematical problems.	Assign tasks to students to solve using computer packages.	Homework. Assignment.

The table above clearly shows how the teaching strategies and assessments methods for the general topology Math 464, and the graduation project Math 491 courses are tailored to best enhance the learning and teaching processes.

3-2-9 Teaching and learning strategies are student-centred and encourage active learning.

All faculty members are required to follow course specifications. Although all the teaching and assessment strategies set out in the program and course specifications must be followed by teaching faculty members, they are also allowed the flexibility to meet the needs of different groups of students. More specifically, faculty members are expected to develop plans regarding how they will conduct their teaching in order to target the attainment of the course specific outcomes. While they are given plenty of flexibility in their teaching styles. The plan is uploaded by all faculty members on the MISBAR platform. Student-centred Teaching and Learning focuses on the needs, abilities, interests and learning styles of the students. The design of curriculum and courses' contents are in support to serve this situation. As shown in table 3.2.8.3 and (3-2-9) the teaching methods includes of the graduation project Math 491 includes:

1. Group work which allows students to be engaged in the learning process at a high level. where they learn how to solve more complex mathematical problems than they could do on their own. They also get the opportunity to value group work and be open to different perspectives.
2. Case study: Many students learn better from examples, therefore presenting ideas and concepts through clear examples can therefore be a very effective technique.
3. Free discussion: During this interactive activity students talk with each other about some mathematical problem or concept, and exchange ideas. The Lecturer's main role is to encourage students to participate in the discussions and facilitate the whole process.
4. Brain streaming strategy enhances and helps students to develop higher critical thinking skills.

Each course learning outcome needs special methods for teaching and learning as well as special methods for assessment according to the nature of the learning outcomes. In addition, as the learning outcomes of courses are derived from those of the program, therefore, teaching and learning strategies are varied according to the nature of the course and according to the learning outcomes of the program. As stated in the course's specifications, the intended learning outcomes of the course determine the type of course and the required strategies for teaching, learning and assessment.

3-2-10 Teaching and learning strategies and assessment methods in the program vary according to its nature and level, enhance the ability to conduct research, and ensure students' acquisition of higher cognitive thinking and self-learning skills.

Courses of lower levels such as Math 100 and Math 101 depend mainly on classic class lectures and exams with different types of questions, while courses of higher levels such as Math 204 use higher strategies, problem based learning and discussion of applied problems. Indirect assessments are also used to evaluate teaching strategies and assessments through students course evaluation questionnaires (3-2-10). The Ultimate objective of the graduation project Math 491 provides the opportunity for students to train on how to conduct independent research work, critically analyse problems, apply concepts and techniques, interpret results and make conclusions.

3-2-13 The program ensures a unified application of its study plan as well as the program and the course specifications offered at more than one site (sections of male and female students and different branches).*

Faculty members at all campuses use the specifications which are and are available at the department website (https://portal-old.ut.edu.sa/ar/web/department-of-mathematics/courses-description). The Alignment committee (3-2-13-1) is formed to ensure a unified application of the program at all campuses and make sure that the course and program specifications are provided to all faculty members. Also, there is a coordinator for each course who ensures the same topics and materials are taught at all sites. The coordinator usually communicates to arrange the teaching schedules, content coverage and assessment methods to be similar in both sections. Each course has only one course coordinator, who is responsible for keeping harmony in work between both sections. All courses are delivered using the same program and course specifications. The course coordinator is responsible for ensuring the study plan and implementation of program and course specifications as offered in the Math Program. course reports available at (3-2-13-2).

3-3 Quality of Teaching and Student's Assessment

3-3-1 The program monitors the commitment of the teaching staff to the learning and teaching strategies and assessment methods included in the program and course specifications through specific mechanisms.*

The monitoring of the program delivery process across all campuses is managed by the program alignment committee (3-3-1-1), the committee is responsible for ensuring that all faculty members across all campuses are following the same teaching strategies and assessment methods as well as targeting the same learning objectives. The committee conducts on site visits to all branches to meet and discuss issues with faculty members and uses students program and course evaluation surveys as indirect assessment mechanisms to monitor the program as well as the delivery of the courses across all campuses. At the beginning of each semester, the department administration directs the instructors to hold their responsibilities towards the courses to discuss all issues that are related to those courses. Also the mathematics program assigns a coordinator to every course, the coordinators assure that all the teaching and assessment methods are uniform throughout the semester in male and female sections. Any problem encountered will be discussed in the department council, for example in the departmental council meeting (3-3-1-2) two issues were addressed the first one is the first one is about online exams, to make sure that the assessment is done by the student the council suggested that an online oral presentation and questions should be included. The council also discuss the issue of connecting the course learning outcomes, in order to ensure a fair distribution of exams questions over all the learning outcomes and the learning domains and to guarantee uniformity of exams across all campuses, the council members have agreed to implement the assessment-learning outcomes matrix (3-3-1-3) in the preparation of exams questions.

3-3-2 The necessary training is provided for the teaching staff on learning and teaching strategies and assessment methods identified in the program and course specifications, along with the effective use of modern and advanced technology; and their use is monitored.

All faculty members are expected to maintain professional development that depends on improving the major areas of academic work such as teaching strategies, methods of assessment, research activities and administrative work. Training programs, workshops and other activities are provided via different bodies at the university such as Deanship of Development, Quality and Deanship of Electronic and Distant Education and the development and quality agency of the FSUT. In addition the Vice Deanship of Quality and Development at the Faculty of Science provides workshops in teaching strategies and assessment methods. The faculty members training program delivered during the previous academic year is presented in (3-3-2-1) the program includes workshops on

1. Writing learning outcomes for programs and courses.
2. Program and course specifications
3. Annual course and program reports.
4. Learning outcomes assessment.
5. Scientific research skills.

In addition the training programs hosted at FSUT are presented in (3-3-2-2). In (3-3-2-3) a sample of attendance certificates of workshops regarding learning outcomes development and connecting exams questions to course learning outcomes is presented.

3-3-3 At the beginning of each course, students are provided with comprehensive information about the course, including learning outcomes, teaching and learning strategies, and assessment methods and dates, as well as what is expected from them during the study of the course.

At the beginning of each course, it is mandatory for the course instructor to provide students with an elaborative explanation to the course inauguration with detailed rationale, significance and relevance of the course, the learning outcomes as well as the methods of assessment. Feedback from students is used to monitor the commitments of the teaching staff to these regulations. Students course evaluation survey is divided into three main sections: The first one is about the start of the course, the second one is about the delivery process and the third one is about the evaluation process Figure 3-3-3-a.

Figure 3-3-3-a: Students course evaluation survey.

Please, use a pencil or blue/black pen only, and do not use red, green or yellow

▪ (Strongly agree) means that the expression is absolutely true and that the requirement has been fully fulfilled. ▪ (Agree) mean that the expression is in general true and that the requirement has been very nearly fully fulfilled. ▪ (True to some extent) means that requirement has on average been fulfilled. ▪ (Disagree) means that the requirement has been poorly fulfilled or has not been fulfilled in most of the cases. ▪ (Strongly disagree) means that requirement has been fulfilled in a very bad way, has not been approached at all or has very rarely been fulfilled.	Strongly Agree	Agree	True to some extent	Disagree	Strongly Disagree
Questions about the start of the course:					
1. The course outline (including the knowledge and skills the course was designed to develop) was made clear to me.	○	○	○	○	○
2. The things I had to do to succeed in the course, including assessment tasks and criteria for assessment, were made clear to me.	○	○	○	○	○
3. Sources of help for me during the course including faculty office hours and reference material, were made clear to me.	○	○	○	○	○

Moreover, Blackboard has various key features permitting instructors to provide students with comprehensive information about the course such as course specification and required reference materials (3-3-3-1). In addition, the unit of measurement and Evaluation at UT launched the internet platform MESBAR (https://misbar.ut.edu.sa/login/index.php). At the beginning of each semester, instructors are required to upload all the following information about the course:

1. Basic information of the course.
2. Instructor information.
3. Lecture and lab timetables.
4. Course description.
5. Course objectives and teaching strategies.
6. Course delivery schedule during the academic semester.
7. Assessment and evaluation plan and schedule.
8. References and further reading materials.
9. The instructor's policy of dealing with students within the framework of the university laws, regulations and guidelines.

Students are encouraged to refer to this platform to acquire a comprehensive understanding of the course, contents, delivery and assessment processes.

3-3-4 The courses are periodically evaluated for ensuring the effectiveness of the teaching and learning strategies and assessment methods, and reports are prepared on them.

The evaluation of the teaching strategies and assessment methods is documented in the course reports. Faculty members are responsible for preparing course reports at the end of every semester, course coordinators are responsible for collecting reports from different sections and preparing a combined report, a sample of combined and single reports are valuable at (3-3-4-1). The course combined reports are archived and reviewed by the development and quality committee and presented before the department council. The students' results and recommendations for further improvements are discussed and approved by the department council. After the approval of the course reports, the HOD submits the reports to the Vice-Deanship of Development and Quality assurance. The Vice-Deanship of Development at the faculty is responsible for ensuring the execution of quality procedures, processes and documentation using the NCAAA forms and templates. All the approved recommendations and action plans for further improvements in all reports are collected and included in the program report. The file (3-3-4-3) contains a diagram of the full process discussed in this section.

3-3-5 The program applies mechanisms to support and motivate excellence in teaching, and encourages creativity and innovation of the teaching staff.

Each year faculty and staff members are honored for their commitment to teaching, services and publications. The Vice-President for Development and Quality has recently established an annual "Teaching Excellence Award" to acknowledge and encourage excellence in teaching and to give faculty members the opportunity to further share their good practice with others, In (3-3-5-1) the department council approved for nominating two faculty members for excellence award. At the end of every academic year the FSTU holds an open day to celebrate the end of the academic year and the distinguished faculty and staff members in all aspects of their roles, the folder (3-3-5-2) contains a short presentation video of all the faculty and staff members that were honored at the end of the previous academic year as well as the announcement for the celebration. TU also rewards distinguished faculty members (3-3-5-3); details of selection criteria and procedure are available

online (https://www.ut.edu.sa/ar/Deanship/quality-and-development/Excellence-Award/Pages/default.aspx).

3-3-6 The program implements clear and publicized procedures to verify the quality and validity of the assessment methods (e.g., their specifications, diversity, and comprehensiveness to cover the learning outcomes, distribution of grades and accuracy of marking), and to ensure the level of student achievement.

The mathematics program uses the following specification table (3-3-6-1) for preparation of exams, this table is used by all faculty members for exams construction. The specification table figure 3-3-6 is a two-way chart that defines the test content, and links subject matter content to behavioural educational learning outcomes. It shows the relative weight of each educational content topic, and the relative weights of the behavioural learning outcomes at their different levels in Bloom's taxonomy. The purpose of the specification table is to:

1. Assure that a representative sample of course contents and course learning outcomes is assessed.
2. Grades are distributed fairly over course continents and learning outcomes.
3. Allow Faculty members to construct questions that focus on key areas.

Figure 3-3-6: Specification table for Math 203 course.

			Learning Domains						
Topics Weight	Marks	Question	Communication	Interpersonal	Cognitive	Knoweledge	Q &M	# Topics	Topics
			0	0	12	8			
30%	7,5	3,0	0	0	2	1	Question	6	Chapter 1
			0	0	5	3	Mark		
30%	7,5	3,0	0	0	2	1	Question	6	Chapter 2
			0	0	5	3	Mark		
40%	10,0	4,0	0	0	2	2	Question	8	Chapter 3
			0	0	6	4	Mark		
		10	0	0	6	4	# Q		
	25		0	0	15	10	# M		
100%			0%	0%	60%	40%	Domains Weight		

Steps for preparing the specification table are:

1. List all the topics that are included in the course.
2. List all the learning outcomes associated with each topic.
3. Assign a percentage weight to every topic based on the professional requirements such as the number of contact hours.
4. Assign the specific type of question you would like to ask depending on what skill or cognitive learning, you would like to emphasize to every learning outcome.
5. Assign corresponding percentages weight to each learning domain based on the associated number of learning outcomes.
6. Specify the total number of questions.
7. Specify the total Mark.

Faculty members are given training workshops on how to prepare the specification table (3-3-6-2). The Unit of Measurement and Evaluation also offers training courses and workshops for faculty members in measurement and evaluation to enable them to improve their skills.

3-3-7 Effective procedures are used to verify that the work and assignments of students are of their own.

Students at the Mathematics Program are obligated to confirm that their works are their own by writing a statement implying this on the first page (3-3-7-1). Fairness and integrity are the most important values, The Mathematics Program follows the UT polices and procedures (https://www.ut.edu.sa/ar/administration/vice-rector-for-academic-affairs/Pages/default.aspx#) regarding these issues. There are many programs that are used to ensure plagiarism free students work that are offered by UT such as Ithenticate. Also Staff members can use the safe assignment service that is provided by Blackboard to check for originality of students' work and assignments.

3-3-8 The feedback is provided to students about their performance and evaluation results at a time that allows them to improve their performance.

In terms of feedback, students need to understand why they have got the grade or mark they have and why they have not got a higher (or lower) grade. Criteria need to be explicit and understood by students, and demonstrably used in forming grades. After each assessment, staff members are giving feedback to students about their performance in the exam and the common errors. In addition, each student has a chance to revise his answer paper with his instructor and has a special feedback for his case. This part can be assessed by measuring satisfaction of students to the question "The instructors in the program gave me helpful feedback on my work" in the program evaluation survey. The program evaluation survey in 1441 showed that the satisfaction rate of the students responding to this point was 56.4 %. (3-3-8).

C. Overall Evaluation for Quality of the Standard:

Table3.2 : KPI – *Students' Evaluation of quality of learning experience in the program.*

NCAAA KPI Reference Number: KPI-P-02
Description:
Average of overall rating of final year students for the quality of learning experience in the program.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Mathematics Program	3.75	3.8	3.6	4	3.735

Analysis:

The actual benchmark is 3.75 which is the same as the external benchmark, indicating an overall strong agreement among final year students on the high quality of their learning experience in the program. The mathematics program offers a high quality curricula and extracurricular activities that meets the standard of attributes set by the NCAAA and appeals to its students, also students are

provided with effective academic, professional, psychological, and social guidance, and counseling. Students also offered a variety of workshops such as "The role of mathematics in sustainable development workshop delivered by prof: Abdul Hamid Kara from vits university, south africa and prof: Zakir Hussian Ahmed from Imam Mohamed ibn saud University". The faculty of science also launched an initiative entitled "Learn to Contribute" targeting students at all science departments. This initiative aimed to provide student training in academic skills, research skills, social skills and life skills. The engagement of students in such activities highly enhances their learning experience and satisfaction. The mathematics program is planning to hold more scientific activities and provide more learning resources especially at umluj campus, therefore we expect substantial increase in students satisfaction about their learning experience in the coming academic years.

Recommendations:

1. Enhance students' practical learning experiences by providing field work training opportunities.

***Explain:**

1. Why was this internal benchmark provider chosen?
To measure the students' evaluation of the quality of learning experience in the program.

2. How was the benchmark calculated?
Average of overall rating of final year students for the quality of learning experience in the program

3. Name of the internal benchmark provider?
The programs and study plans committee

1. Why was this external benchmark provider chosen?
King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider
King Khalid University (KKU)

Table3.3 : KPI – *Students' evaluation of the quality of the courses.*

NCAAA KPI Reference Number: KPI-P-03 Description: Students' overall rating of the quality of their courses.					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Mian	3.9	4	3.9	4.2	3.8
Umluj	4.3	4	4	4.4	

Analysis:

The students' rating of the quality of courses is quite satisfactory and in a continuous progress above the external benchmark the data shows. There are multiple factors that play an important role in this observed progression of students satisfaction about the mathematics program courses. Last year the programs and study plans committee carried out a comprehensive review of all the course specifications, student learning outcomes, assessment, teaching strategies and graduate attributes, special attention was paid to courses in which students show a trend of low performance, proposals for modifications approved by the departmental council and implemented by faculty members. The committee which is responsible for handling all curricular matters is committed to maintain the Program's position at the forefront of higher education through high quality curriculum. Another important factor that leads to students satisfaction about the course is the flexibility of the curriculum to deal with the COVID-19 challenge. The program changed to the mode of education to distant teaching starting from 16/7/1441 H (10/3/2020). Students as well as faculty members received extensive workshops to learn how to operate on the Blackboard platform. Also since the beginning of the preparation for the institutional academic accreditation a couple of years ago the Mathematics Program has formed a committee that is responsible for monitoring the delivery of the curriculum at all sites including Umlug branch. Despite the endless efforts of the Mathematics Program to improve all aspects of the itching and learning process, the withdrawal rate from the program is still high mainly because they don't see a clear picture about their future in the labour market. Also most of the students joining the program have a weak background in the basics of algebra and trigonometry, and that puts a huge limitation in their performance and consequently leads to dissatisfaction.

Recommendations:

1. The mathematics program should develop and implement a plan to revise its curriculum to enhance students' background in basic algebra and trigonometry.
2. The mathematics program should ensure that its curriculum satisfies the needs of the labor market.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the students' evaluation of the quality of the courses.

2. How was the benchmark calculated?

From the analysis of the survey results.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Table3.4 : KPI – *Completion rate.*

NCAAA KPI Reference Number: KPI-P-04 Description: Proportion of students entering undergraduate programs who complete those programs in the minimum time.							
Campus	**Actual Benchmark**			**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
	Male	Female	Average				
Main	23%	52%	38%	40%	28%	40%	24.86%
Umluj	41%	50%	46%	50%	40%	50%	

Analysis:

The actual value of the completion rate at all sites is low by all standards. Most of the students joining the program have a weak background in Mathematics as well as English language, and that puts a huge limitation in the students' performance as well as a huge pressure on the program. Also the major reason is that the majority of students forced themselves to enrol in the mathematics program because they didn't find an opportunity to join other programs that are more attractive professionally at the local market. The completion rate for female students is much better than male students at all campuses, that is due to cultural reasons, where female students are more keen to study to empower themselves in order to open more opportunities for them in the job market. Even though the external benchmark provider KKU is more than three decades older than UT, the actual completion rate of the Mathematics Program in minimum time is quite high compared to the external benchmark, which reflects the huge efforts the Mathematics program is investing in improving the performance of its students. During the last couple of years students at the mathematics program have enjoyed a variety of academic advising enhancement programs devoted to supporting weak performance students especially first year students, the outcome of these efforts are reflected in the observed increase in the graduation rate. In the coming years the Mathematics program will put more emphasis on academic advising enhancement programs to keep the graduation rate in a continual progression.

Recommendations:

1. The mathematics program should develop and implement a plan to enhance students' background in basic mathematics.
2. The Mathematics Program should develop in collaboration with the department of English an enhancement program for the students.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the completion rate.

2. How was the benchmark calculated?

Proportion of students entering undergraduate programs who complete those programs in the minimum time.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Table3.5 : KPI – *First-year students retention rate.*

NCAAA KPI Reference Number: KPI-P-05

Description:

Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year.

Campus	Actual Benchmark			Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
	Male	Female	Average				
Main	60%	95%	78%	80%	75%	80%	57.85%
Umluj	81.1 %	86.2 %	84%	90%	82%	90%	

Analysis:

The actual value of the retention rate at all sites is adequate. First year students get special academic advising programs to help them fit smoothly in the UT environment. The main obstacle for first year students is the lack of English language skills as well as the weakness in the basics of mathematics especially algebra and trigonometry, which results in a negative impact on their retention rate. Another factor that affects the retention rate is the withdrawal from the program, where most of the students prefer to transfer to other programs which are considered more professionally attractive . The retention rate for female students is better than male students at all campuses, that is due to cultural reasons, where female students are more keen to study to empower themself in order to open more opportunities for them in the job market. During the last couple of years students at the mathematics program have enjoyed a variety of academic advising enhancement programs devoted to supporting weak performance students especially first year students, the outcome of these efforts are reflected in the observed increase in the retention rate. Currently the Mathematics program is carrying out a major modification to the first year curriculum that aims to provide first year students with a comprehensive basic mathematical skills. The outcomes of all these efforts will be realized in the coming year through the expected increase in the students retention rate. Even though the external benchmark provider KKU is more than three decades older than UT, the actual completion rate of the Mathematics Program in minimum time is quite high compared to the external benchmark, which reflects the huge efforts the Mathematics program is investing in improving the performance of its students.

Recommendations:

1. The Mathematics Program should update the first year curriculum to appeal to the needs of the students and help them fit smoothly.
2. First year students should write a basic skill exam to investigate areas of weaknesses.
3. The Mathematics Program should develop in collaboration with the department of english an enhancement program for the students.

***Explain:**

1. Why was this internal benchmark provider chosen?
To measure the first-year students retention rate.

2. How was the benchmark calculated?
Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year.

3. Name of the internal benchmark provider?
The programs and study plans committee

1. Why was this external benchmark provider chosen?
King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider
King Khalid University (KKU)

Table3.7a: KPI – *Graduates employability and enrolment in postgraduate programs.*

NCAAA KPI Reference Number: KPI-P-07-a
Description:
Percentage of graduates from the program who within a year of graduation were employed.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	6%	5%	4.7%	8%	11%
Umluj	5%	5%	4.7%	7%	

Analysis:

Even though the actual value of this KPI at both Main and Umluj campuses is comparable to the external benchmark it is quite low in all standards. There are multiple underlying reasons that contribute to this low value, firstly the mathematics program curriculum has to be more aligned with the needs of the local job market, secondly there is a lack of awareness of the importance of mathematics within junior schools students as well as within the employers. Nevertheless the establishment of the Neom project in the Tabuk region opens a huge opportunity for the mathematics

program and its graduates to distinguish itself from all other mathematics programs throughout the kingdom.

Recommendations:

1. The mathematics program should perfectly align its curriculum with the local job market needs, especially the ones that are related to the Neom project.
2. The mathematics program should consider introducing more applied and computational elements to its curriculum that are closely related to the job market, and hence provide students with all the skills that can help them in a variety of professions.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the percentage of graduates from the program who within a year of graduation were employed

2. How was the benchmark calculated?

Number of students employed within a year of graduation over the total number of graduates.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Table3.7b: KPI – *Graduates enrolment in postgraduate programs.*

NCAAA KPI Reference Number: KPI-P-07-b Description: Percentage of graduates from the program who within a year of graduation were enrolled in postgraduate programs.					
Campus	**Actual Benchmark** Average	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Main	2.5%	3%	1.9%	3%	11%
Umluj	3%	3%	0%	3%	

Analysis:

The actual value of this KPI is quite low in all standards, there are many reasons that contributes to this low value, the major reason is that the majority of students who enrolled in the mathematics

program did so because they didn't find an opportunity to join other programs that are more attractive professionally, and that is clear from the high percentage of withdrawal after the first year of the program. Also the MSc program offered by the mathematics department is mainly devoted to pure mathematics areas of speciality, and that puts a huge limitation on the opportunities of postgraduate students in the job market. To resolve the situation the mathematics program has submitted to the UT a proposal to open a new postgraduate program in applied mathematics, all the necessary documentation has been provided and approved by the departmental and faculty councils and it is expected that the new applied mathematics program will start accepting students by the begin of academic year 1443-1444H. As a result we expect an increase in the percentage of graduates from the program who pursue postgraduate studies.

Recommendations:

3. The mathematics program should introduce more applied and computational elements to its curriculum that are closely related to the job market, and hence provide students with all the skills that can help them in a variety of professions.

4. The mathematics Program should promote the importance and application of mathematics in solving real world problems to junior students at local schools, through different activities that suit their academic level.

***Explain:**

1. Why was this internal benchmark provider chosen?
To measure the average number of students per class.

2. How was the benchmark calculated?
Number of students on all sections divided by the number of sections.

3. Name of the internal benchmark provider?
The programs and study plans committee

1. Why was this external benchmark provider chosen?
King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider
King Khalid University (KKU)

Table3.8: KPI – *Average number of students in the class.*

NCAAA KPI Reference Number: KPI-P-08 Description: Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory or clinical session).					
Campus	**Actual Benchmark**				

	Male	Female	Average	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	35	45	40	40	43	35	Male:28
Umluj	50	52	51	45	50	45	Female:26

Analysis:

The actual average number of students per class at the main campus is quite adequate 40 and comparable with the external benchmark. In order to sustain the stability of this KPI in the coming years, the Mathematics Program puts huge efforts to retain its teaching staff through providing an appropriate supportive teaching environment for faculty members that encourage research and professional development.

At Umluj campus there is a shortage in faculty members compared to the number of students enrolled in the program, this situation results in an increase in the workload and consequently decrease in students satisfaction with the academic advising as well as a decrease in research production. To rectify this issue the mathematics program has adopted an urgent resolution by using online teaching platforms for some courses, which will allow faculty members at main campus to carry some teaching load at Umluj branch. Also the mathematics program has 13 (5 males and 8 females) scholarship students specialized in different areas of mathematics that are studying overseas and are expected to join the program during the coming 4 years, which will be enough to fill in the recent shortage in the number of faculty members at Umluj campus. As a result the average number of students per class is expected to be less in the coming academic year and also will be more reduced as the overseas scholarship students come back.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the average number of students per class to match the international standards.
2. Implement exceptional policies to support the efforts of retaining the current faculty members at all sites.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the average number of students per class.

2. How was the benchmark calculated?

Number of students on all sections divided by the number of sections.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU

Table3.9: KPI – *Employers' evaluation of the program graduates proficiency .*

NCAAA KPI Reference Number: KPI-P-09 Description: Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey.					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Mathematics Program	3.1	2.5		3.6	NA

Analysis:

The actual benchmark of this KPI is 3.1 indicates a satisfaction of stakeholders of the quality of the mathematics program graduates attributes, this satisfaction rate would have not been achieved without the endless efforts of the mathematics program in implementing a high quality curriculum and continuously assessing learning outcomes through various mechanisms. Even though the KPI value is adequate keeping in mind that the mathematics program at UT is relatively new, there is still a big room for continual improvement. The mathematics program is planning to establish structured relations with both employers and graduates in order to be continually updated about the needs and opportunities in the job market and communicate these information to its graduates as well as providing special training programs to the graduates students. All these efforts are expected to increase the students employability as well as employers rating by at least 0.5 on a five-point scale. Also the Neom project will hopefully open a tremendous amount of opportunities that should be used for the benefit of the program and its graduates.

Recommendations:

1. Establish structured relations with both employers and alumni.
2. The mathematics program should introduce more applied and computational elements to its curriculum that are closely related to the job market, and hence provide students with all the skills that can help them in a variety of professions.
3. Provide graduate students with a special training program to prepare them for the job market.
4. Develop and implement a plan to make use of the opportunities that will be offered by the Neom project in supporting the program and its graduates.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the average of overall rating of employers for the proficiency of the program graduates

2. How was the benchmark calculated?

From annual survey results using a five point scale.

3. Name of the internal benchmark provider?

The programs and study plans committee

Overall Analysis

Strengths:

1- The program is committed to the institutional policies, standards, and procedures in the design, development and modification of the curriculum.

2- The curriculum design considers fulfilling the program goals and learning outcomes, and the educational, scientific, technical and professional developments in the field of specialization; and is periodically reviewed.

3- Students' learning experiences are reflected well on the students' satisfaction.
4- The quality of the course's satisfaction rate presents a good level among the students.
5- Regarding The contribution of the extra-curricular activities to the PLO, an action plan must be developed to address this criteria

Areas for Improvement:.

1- The Mathematics Program should hold more intensive revisions to first year students to fill in the gaps in their mathematical background and allow them to easily fit into the university system.
2- Reducing the number of students per class, especially at Umluj campus.
3- Appropriate mechanism for developing graduate professional skills based on the market needs, training and preparation for interviews.
4- Better use of a database for graduate students to keep the program in continuous communications with them and be updated about their careers progression.
5- The Mathematics Program should have an action plan in place to address the dropout and low performance issues of all students.
6- Develop an action plan to address the contribution of the extra-curricular activities to the PLO.

Priorities for Improvement:

1- Reducing the number of students per class especially at Umluj campus.
2- The Mathematics Program should have an action plan in place to address the dropout and low performance issues of all students.

3- The Mathematics Program should hold more intensive courses for first year students to fill in the gaps in their mathematical background and allow them to easily fit into the university system.
4- Develop an action plan to address the contribution of the extra-curricular activities to the PLO.

Standard 4. Students (Overall Rating: 3)

A. A brief realistic and objective presentation of the present status of the program with respect to Student issues.

Students can enroll in Tabuk university "Math program" through an online registration where all admission and registration mechanisms are conducted through the website of the Deanship of Admission and Registration. The deanship provides students with conditions and admission steps. All guides are available on their website. The policies, requirements, procedures for all academic matters are also available at the department websites. The website of deanship is clear, simple and easy to use. Also, it is in two languages (Arabic and English). All admission criteria are publicly disclosed and applied fairly to all applicants. Course registration system " via MYUT" which is established by UT allows students to register their courses easily and process their records. Criteria and requirements of admission are clear and understandable for students. The roles of admission are publicly declared inside the UT admission guide. Admission requirements are revised regularly by the council of faculty of science. The Mathematics Program at Tabuk University is committed to provide services necessary to support and enhance learning and to provide students with opportunities for academic success. The program provides the academic consultation support to all students at the Mathematics Program, through various means. The information about the program and the requirements for completion of the study, policies and procedures regarding students' rights, responsibilities and code of conduct are also available to all students. The number of students admitted to the program is compatible with the available resources for the program.

The program also offers curricula and extra-curricular opportunities for all students and orientation program for first year students. Students' satisfaction about their teaching experiences, services and support are evaluated on a regular basis and action plans are prepared for further improvements.

A description of the process for the preparation on this standard:

1. A Teaching and Learning Committee was formed from members with high experience in quality assurance from both the main campus and umluj branch (male and female section). The committee is responsible for writing both standards 3, 4 and 5.
2. Standard-4 requirements were defined by utilizing NCAAA related documents.
3. The subcommittee monitored the process of collecting evidence and writing standard 4.
4. The subcommittee for standard 4 investigated the following documents:

§ Students admission.
§ Students records.
§ Students management.
§ Students advising and counselling services.
§ Students experience surveys for academic years 1440/ 1441.
§ Programs evaluation surveys for academic years 1439/1440 and 1440/1441.
§ Alumni survey for the academic year 1439/1440 and 1440/1441.
§ Stakeholders' survey surveys for academic years 1440/ 1441.
§ Different guides and procedures that regulate the relation between staff members and UT.

5. First drafts of the self-evaluation report of standard 4 were prepared.
6. Meeting was held with evaluators from the Vice-Presidency of Development and Quality in UT for evaluation of the quality of writing of standard 4 and suitability of the attached documents.
7. Feedback and recommendations from the review committee were used to refine and evolve the recommendations in the final report.
8. An external review was conducted by experts in the field of quality assurance.
9. Independent opinion was consulted to review the standard.
10. After the cycles of reviews, the SSR report was ready.

11. Conclusions and recommendations for future continuous improvements were included

B. Report on the standard:

(Provide an analytical and critical report about the evaluation results of the standard based on required data, evidence, and KPIs).

4-0-1 The program has approved and publicly disclosed criteria and requirements for the admission and registration of students that are appropriate to the nature of the program, and are applied fairly.

Undergraduate admission to any program at Tabuk University is managed by the Vice Rector of Academic Affairs "The Deanship of Admission and Registration". Admission requirements are based on student preference, seat availability, as well as on the student's GPA. Applicants are advised to fill in the online application form which is available at the university education gate "MYUT" via the following webpage https://myut.ut.edu.sa/ut/init

All the admission procedures and policies such as admission requirements, responsibilities for enrolled students, certificates, graduation and transfer requirements, suspension, prohibition, dismissal, re-admission policies, and the collection and retention of student academic records and data are described clearly on the Student's Catalogues and Handbook which is available at Deanship of Admissions and Registrations website https://portal-old.ut.edu.sa/ar/web/dar/home (4-0-1A). Also, the Admission handbook (4-0-1B), Admission accepted percentage (4-0-1C), Scholarship rules and regulations (4-0-1D) are available for students on the Deanship of Admissions and Registrations website.

The deanship provides students with step-by-step guides covering the involved mechanisms. In

harmony with the UT's paperless policy, the Deanship of Admission and Registration has adopted an all-electronic mechanism where students do not have to submit any hard-copy documents.

After the deadline, applicants are thoroughly reviewed and shortlisted according to their GPA , the results of the National Centre for Assessment, and according to the applicant's order of preferences. Successful applicants are informed through email, mobile phone message (SMS), and receive information concerning the Faculty and subject (s) for which they have been selected.

The Deanship also lists answers to frequently-asked-questions which can help students to find most of the answers to any potential ambiguity related to the admission and registration processes such as course schedule, addition, deletion and completion: https://www.ut.edu.sa/ar/web/dar/questions. The admission website is easy to use and clearly displayed in both Arabic and English languages. The website contains all needed information as: 1) Study plans for all academic programs in UT. The applicant just selects the faculty then the program requires. The Website displays information about courses' schedule and graduation documents. 2) Report verification to check for the cumulative GPA for any graduate by student ID. 3) Technical support for admission. 4) Students application confirmation.

In addition, All policies and regulations regarding admission and selection of transfer students, visiting opportunities, withdrawal from the university, dismissal, students records, etc are available at math department website (4-0-1 E).

4-0-2 The number of students admitted to the program is compatible with the available resources for the program (e.g., teaching staff, classrooms, labs, and equipment) .

Each year, the faculty council meets with the head of the department of math in advance of the following academic year to decide the enrolment of students and its suitability to capacity of classrooms and labs (4-0-2A & 4-0-2B).

The number of students to academic staff in the last academic years is:

Year	Main Campus		Umluj Branch	
	Male	Female	Male	Female
41/42 H	10:1	28:1	56.6:1	39.1:1
41/40 H	8:1	26:1	50.6:1	37.0:1
40/39 H	8:1	22:1	49.2:1	48.8:1
In case increasing the number of students the Math program solves this problem by increasing the number of collaborators when it is needed.				

Regarding the availability of classrooms and computer labs (41/24 H):

		Main Campus		Umluj Branch	
		Male	Female	Male	Female
Classrooms	numbers	7	7	7	25
	Capacity	35	50	45	35
The classrooms are equipped with all necessary facilities in both main campus and Umluj Branch. In the academic year 41/42 H, the male section at Umluj Branch moved to a new campus location, which offers an appropriate learning environment for students.					
Computer labs	numbers	2	2	2	2
	Capacity	30	25	30	25
Computers in computer labs are equipped with internet access and various software programs are also available for students.					

In addition, about classrooms, computer labs was evaluated by measuring students' response to the question

1- " Classroom facilities (for lectures, laboratories, tutorials etc) were of good quality

Year	Main Campus	Umluj Branch
41/42 H	63%	81.5%

2- ""Student computing facilities were sufficient for my needs."

Year	Main Campus	Umluj Branch
41/42 H	61.4%	70.4%

4-0-3 The program provides basic information to students, such as study requirements, services, and financial fees (if any), through various means.

Faculty of science provides several forms of assistance to help students learn experience throughout their progress in the Math Program at all levels. The assistance is mainly in the form of availability of different information on its website (4-0-3A&B). In addition, all information about the program is included in the faculty and department guides (4-0-3C&D).

At the beginning of each semester, all staff members provide a general course overview, guide the students to explore the course Website "in blackbored platform", and indicate to all instructions of the course and assessment methods (4-0-3E). In addition, Both MYUT system (https://myut.ut.edu.sa/ut//init) and program website contain all information about the study plan, courses (https://www.ut.edu.sa/ar/Faculties/science/Mathematics-department/Pages/default.aspx) .

4-0-4 The program applies fair and approved policies and procedures for students transferring to the program and the equivalency of what students had previously learned.

The program applies fair and approved policies and procedures for transfer of students and equivalency of what the students learned previously through the terms and policies of transfer that was set by the Vice-rectorate for Academic Affairs. The rules are published on the website of UT https://www.ut.edu.sa/ar/web/dar/home. The rules are applied in the Faculty of Science by the academic affairs committee. The whole process is applied according to the rules and is fair and transparent. In addition, each year, Deanship of Admission and Registration requests each program to put its policies for students transfer for this program in accordance with UT policies of transfer. In advance, before the start of the academic year, the Math program would submit its detailed policies for internal and external students transfer (4-0-4A&B).

4-0-5 The program provides comprehensive orientation for new students, ensuring their full understanding of the types of services and facilities available to them.

In order to ensure students' full understanding of the services and facilities available, and their rights and responsibilities, all necessary information is made public at the program website (4-0-5A). In addition, students admitted at the University are advised on curriculum matters through orientation programs, which are conducted once at the beginning of each academic year. In the orientation programs, representatives from each department introduce their curriculum and career opportunities where the math department was one of them. Both academic advisors and senior students participate in orientation programs for new students to explain the program, policies, procedures, rules and regulations of the UT and program (4-0-5B&C).

In orientation program, students received a package that includes:
- The Student guide Handbook
- Contact information
- Academic counselling guide
- Executive rules for students grievance
- The rules of study and exams in UT
- The Academic Calendar.
- Location of the classrooms prior to the beginning of classes
- IT guide including how student can activate their email account and changing the password
- Welcome gifts

In addition, Students satisfaction about the orientation program was evaluated by measuring

students' response to the question "When I first started at this institution the orientation program for new students was helpful for me".

Year	Main Campus	Umluj Branch
41/42 H	60.6%	88.9%

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4-0-6 The program informs students about their rights and duties, the code of conduct, and grievance, complaints, and discipline procedures, using a variety of means; and applies them fairly.*

All the policies and regulations of students are implemented by UT and routinely followed in the Math Program with complete protection of students' rights. All faculty members at the Mathematics Department share the core values of supporting the legal rights of students. The Academic Advising Committee studies student's complaints on receiving them. Relevant policies and procedures are approved by the University Council and are widely available at the vice-rector of academic affairs website. All of these regulations have been published on the department website as well as the blackboard platform. Through the blackboard students can approach their academic advisors (4-0-6A&B). Student awareness of their rights , duties and code of conduct regularly evaluated through student`s survey (4-0-6 E)

Course policies are clearly provided to students in the first week of each semester and published in the blackboard account of each course. Each staff member reminds students about assessment policy and timetable and attendance policy. Students with more than 25% absence without an accepted excuse, are not allowed to attend the final exam and fail in that course. All the staff members have to upload student attendance to the MYUT system, where students can monitor their attendance. The students are subjected to academic warning when they have been absent for 15% and 20% of the total hours of the course. Detailed policies and procedures for dealing with academic misconduct such as plagiarism and cheating are clearly explained to students during orientation lectures at the beginning of each semester.

During the covid-19 pandemic, faculty of science shared all the contact information " including math department contact details" with students to help them if they have any inquiry (4-0-6C). Also, there is a form for grievance and complaint available for student at faculty website (4-0-6D).

4-0-7 Students are provided with effective academic, professional, psychological, and social guidance, and counseling services through qualified and sufficient staff.*

The UT has established an academic advice unit to provide students with academic advice and career planning. The unit's principal mission is to provide educational, psychological, and vocational consulting for students. It also provides guidance and counselling activities to raise students' awareness of various issues through meetings and activities (4-0-7A). The university also provides students with medical and counselling services; this includes psychological and counselling care

through the psychological programs offered by the Academic Advising Unit. The UT ensures that these medical services are provided by qualified medical staff, or members of staff with professional qualifications. Medical services are easily accessible, and emergency assistance is available when required https://www.ut.edu.sa/ar/web/deanship-of-student-affairs/home.

In order to student career and professional development, the deanship of student affairs provides students with various programs and workshops through the blackboard platform (4-0-7B). The log in instructions are easy and available for all students (4-0-7C). In addition, the deanship launched a service "Guide me" which specialised with student psychological counselling via email: srights@ut.edu.sa (4-0-7D). All of these programs and workshops are for students in both the main campus and Umluj Branch.

The faculty of science launched an initiative entitled "Learn to Contribute". This initiative aimed to provide student training in academic skills, research skills, social skills and life skills (4-0-7E). The Math program in both the main campus and umluj branch also provide students with numerous workshops (4-0-7F).

Committee of academic advice at the math department is responsible to follow up the department's students where every student has specified an academic advisor. The academic advisor has to make meetings with students who need help about any related issues. In the beginning of each academic year, Students are distributed to their academic advisors. Each academic advisor can reach the names of students who are under his/her academic guidance and advising. Also, they have access to the academic records of their students, where they can observe the current academic situation, review the progress of the students since their enrolment in the Program and guide them to overcome any low achievement situations. On the other hand, for each student, the MyUT system displayed the name of his academic advisor (4-0-7 G&H).

The students satisfaction of the academic advising is measured through program evaluation survey for the following questions:

1- Adequate academic and career counselling was available for me throughout the program.

Year	Main Campus	Umluj Branch
41/42 H	52%	100%

2- The instructors were available for consultation and advice when I needed to speak with them.

Year	Main Campus	Umluj Branch
41/42 H	45%	100%

4-0-8 Mechanisms are applied to identify gifted, creative, talented, and underachieving students in the program, and appropriate programs are available to care for, motivate, and support each group of them.

A student support system is available to identify students with poor academic performance where a committee of poor performance students was established by FSUT (4-0-8A). Meetings are held by academic advisors at the department with the students to investigate reasons for this poor performance. The academic advisors try to solve the problems. If the student needs psychological help, he will be advised to visit the Psychological Guidance and Counselling Unit. They may also direct them to benefit from the office hours of instructors and to arrange extra tutorial lectures if they need (4-0-8B). Math programs in both the main campus and Umluj branch provide supportive education for students with poor academic performance to improve students' academic level (4-0-8C).

On the other hand, talented students will be advised to communicate with the Creativity and Talent Unit at university (4-0-8D). The deanship of student affairs launched the program " innovators" in order to investigate talented students as well as to support and motivate them (4-0-8E). Also, provide them with training courses (4-0-8F). Also, the math program offer master scholarship for 1st students on his cohort (4-0-8G)

4-0-9 Students in the program are offered extracurricular activities in a variety of fields to develop their abilities and skills, and the program takes appropriate actions to support and motivate their participation.

The student affairs deanship and FSUT offer various extra-curricular activities for students that aim to provide distinguished, various and equal opportunity student activities and services that develop the student's personality and skills to be an active member of his community (4-0-9A). To enhance the effectiveness of the extra-curricular activities the faculty has established a student activities committee which includes math staff members who are responsible for math students (4-0-9B). The university also provides the facilities and equipment necessary for organizing all the extra-curricular activities. Also, Deanship of Student Affairs has established students counselling and guidance units in order to:

1. Help students understand the dimensions of the situation (the problem) and that is half the solution.
2. Help students recognize their potential and abilities.
3. Solve the problems of academic achievement.
4. Solve mental and social problems that may impede academic achievement:

Furthermore, the Deanship of Student Affairs, in coordination with Faculties and departments, implements a comprehensive and diverse program of extracurricular activities, such as sports, community services and training courses in various areas. The department activities are part of faculty activities through the student activities committee (4-0-9 C).

Students satisfaction was measured through assessment of percent of satisfaction of students

to the following questions:

1- "Adequate facilities are available for extracurricular activities (including sporting and recreational activities)" in a student experience survey and in a program evaluation survey.

Year	Main Campus	Umluj Branch
41/42 H	53.2%	81.5%

2- "Adequate facilities were available for religious observances" in a student experience survey and in a program evaluation survey.

Year	Main Campus	Umluj Branch
41/42 H	56.8%	81.5%

4-0-10 The students and alumni of the program are provided with additional activities for their professional development, consistent with the intended learning outcomes, and labour market developments.

The students of the program have additional activities to develop professionally in line with the targeted learning outcomes and labor market developments. The University of Tabuk has established an employment support unit with cooperation with HADAF in order to help their alumni in this matter. The Vice Deanship of Alumni at the Deanship of Student Affairs introduces the services provided by the Student Employment Office at the University of Tabuk in order to guide the alumni in their job choice (4-0-10A).The department organised workshops for students or alumni with cooperation with the student activities committee such as introduction to latex, Excel for beginners to provide them with additional training programs to improve their skills according the program learning outcomes and labor market development (4-0-10B)

4-0-11 The program implements effective procedures to monitor students' progress and to verify their fulfilment of graduation requirements.

The Deanship of Admission and Registration manages an electronic system that records the students statistical data which can be accessed by the Vice-Dean of Academic Affairs, academic advisor at math department ,instructor and the student through MYUT gate or E-register based on the permission given by The deanship of administration and registration. The electronic system is used to follow up students; progress throughout the Math Program. The timelines for reporting and recording results and updating records are clearly defined and adhered to according to the UT's academic calendar. In accordance with the Math Program and UT, students' results are finalized, officially approved, and communicated to students within the times specified. Students' records are maintained online securely and protected by UT, which is offered complete institutional accreditation. The system helps in monitoring the students, records, progression, completion rate and GPA. Progression and completion rates are followed, assessed regularly and evaluated for effectiveness through the annual program report. Faculty members can log in the MYUT system through their unique user name and password. The registered lists for the courses assigned to the course are displayed. The staff member can upload students' attendance and their final grades. The system then automatically updated all students'

records for attendance and grades and calculated their GPA for each semester and cumulative GPA (4-0-11A&B).

4-0-12 The program implements an effective mechanism to communicate with its alumni and involve them in its events and activities, explore their views, and benefit from their expertise and support; and provides updated and comprehensive databases about them.

Academic affairs committee is responsible to communicate regularly with Math Program graduates to monitor their career progress and their achievements in the exams. The committee has a database to communicate with alumni (4-0-12A&B). Also, the Program has prepared an action plan for enhancing communication mechanisms with them (4-0-12C). Moreover, faculty of science has advisory committees which contains a graduate of Math Program (4-0-12D)

4-0-13 Effective mechanisms are applied to evaluate the adequacy and quality of services provided to students and measure their satisfaction with them; and the results are used for improvement.*

According to the Math Program mission, the program offers many services for students. This is done through developing procedures and plans. The effectiveness of those plans are monitored on a regular basis through processes that include surveys of student usage and satisfaction. Consequently, services are developed and modified in response to evaluation and feedback. Math Program aims to adopt highly effective policies and regulations that lead to satisfactory levels of achievements in student admission, registration, and management

As has been mentioned above, the processes and services relating to student admission and registration are carried out through the Edugate and E-Register systems which handle student records and all other related operations electronically.

The satisfaction of students about the services provided to them is evaluated in two ways; 1) annual meetings organised by the vice dean of the faculty in male section as well as the same done by the vice in the female section. A member of the Math department would be present at both meetings in order to handle any issues related to the services. The vice dean then discusses with the department the matter raised at these meetings. As a result the Mathematics program will ensure appropriate action plans are prepared and implemented to improve the program performance regarding these issues. Similar procedure has been done by the vice rector of branches for Umluj campus. 2) surveys that are collected and analysed to measure satisfaction. The Math Program uses the surveys of NCAAA including: Courses Evaluation Survey – Students Experience Survey – Program Evaluation Survey and Alumni Evaluation Survey. All these surveys are conducted in the time frame that is specified for each one. The results of these surveys are used for implementation of improvement plans for Math Program (4-0-13A&B).

4-0-14 The program takes into consideration the special needs of its students (e.g., students with disabilities and international students).

Regarding students with special needs, the buildings of the Math Program in both male and female sections are designed with parking areas and entrances for special needs. Both buildings contain elevators for transfer of students between different floors of the buildings. UT has a unit to deal with

the problems of the students with special needs. The Unit can be contacted by the department through email DRC@UT.EDU.SA in case of needing special facilities in accordance with their disabilities (4-0-14A)

In particular, the female site at the main campus has an office for students in special needs on the ground floor, so they can meet easily with members of the department. For students in need, the department can contact the disable unit to provide these facilities as they offer it in their letter. The department also helps students in need.

There is no problem with joining new international students as the study in the program is conducted in English language. Both department guides and student guides are written in English Arabic and language (4-0-14B).

4-0-15 The program implements effective mechanisms to ensure the regularity of students' attendance and their active participation in the course and field experience activities.

Department members can log in the MYUT system through their unique user name and password to record the students' absence. The registered lists for the courses assigned to members are displayed. The staff member can upload students' attendance. The system then automatically updated all students' records for attendance. The system can be accessed by the students individually by logging into using their special username and password to view all their information privately. The students are subjected to academic warning when they have been absent for 15% and 20%. Students having shortage of attendance, more than 25% absence, are not allowed to attend the final exam and fail in that course. A special committee "Academic affair committee" is responsible every semester to collect all the absence certificates and treated all cases and provide a report as a feedback for the staff member and academic adviser according the percentage of absence which should not be more than 40% .If it is the case, so the student is prohibited for the final exam according the rules adopted by UT study and exam regulation (4-0-15A).

4-0-16 There is appropriate representation for students in relevant councils and committees.

Students have representation for students in relevant councils and committees. For example, the students committee at FSUT contains a representative of Math Program students (4-0-16A). At the department level at the Main campus as well as at the Umluj campus, a similar committee will be established.
The selection of students is based on two criteria : their high GPA, and also they should have very good soft skills especially in communication, self- motivation, leadership, responsibility, teamwork and flexibility. The elected students will be represented in the faculty council to discuss the students' issues.

C. Overall Evaluation for Quality of the Standard:

Table4.10: KPI – *Students' satisfaction with the offered services .*

NCAAA KPI Reference Number: KPI-P-10

Description: Average student's satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, ...) on a five point scale in an annual survey.					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Main	3.1	3.5	3	3.5	3.5
Umluj	1.5	3.5	1	3.5	

Analysis:

Although the KKU is more than three decades older than UT, the average students' satisfaction rate with the various services offered by the program are comparable. That is less than a 9% difference. That is because the Mathematics program at UT puts huge efforts to maintain a clean, attractive and well maintained physical environment that meets health, safety, and quality requirements in both the Main and Umluj campus. A well-ventilated classroom equipped with smart boards and comfortable seats are provided to students. Moreover, computer labs are highly efficient computers connected to the internet. Besides academic activities, there are non-academic activities such as cultural and sport activities. Tabuk university's deanship of student affairs also offers smartphones and laptops to students on a monthly payment plan, since smartphones and laptops come with useful apps like BlackBoards, CamScanner, Microsoft programs and university of Tabuk (My service).

The Library Research Services Section at the deanship of library affairs (UT) provides assistance to students, and researchers to access the required information, such as books, periodicals, government publications, university thesis or from the electronic holdings in the databases or the digital library, even if they are not available in the university library, they are provided through cooperating with other libraries at other local universities or buying them through publishers. All these efforts play a major role in sustaining students' satisfaction. At Umluj branch the students are clearly dissatisfied about the services provided by the program, as a response to this situation the mathematics program at Umluj campus has been relocated at a new buildings equipped with all the supporting facilities, and the work to enhance the Umluj branch in a continual progress, thus we would expect an increase of about 40% in students satisfaction next year. Also at the main campus students will enjoy more services that will be provided to them during the coming academic year.

Recommendations:

1. Provide Umluj campus with all the learning and research resources and facilities as well as all the needed services.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the average student's satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, ...)

2. How was the benchmark calculated?

From annual survey results using a five point scale.

3. Name of the internal benchmark provider?
The programs and study plans committee

1. Why was this external benchmark provider chosen?
King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider
King Khalid University (KKU)

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A brief realistic and objective presentation of the present status of the program with respect to Teaching Staff

Mission and goals of FSUT aim to provide a highly qualified graduate motivated in Math research and positively participate in the community. Therefore, FSUT has recruited qualified staff members with verified Doctoral degrees. All staff members are committed to fit students with high standards of education and training that is compatible with the program learning outcomes. Staff members in Math Program have a great opportunity to enhance their skills in teaching, communication and information technology (IT) through many training programs that are organized by Deanship of Development and Quality and Deanship of E-learning and Distance Education. In addition, some training courses are designed especially for staff members of FSUT and introduced by the Training Unit in FSUT. The Deanship of Human Resources centrally manages the majority of faculty and staff employment processes. Its objective is to meet the university's need for appropriate human resources. It is responsible for the implementation of the tasks and policies governing recruitment, promotions, transfers, employee rights and duties, contractual agreements, and following the progress of both Saudi and Non-Saudi faculty and staff members. The Deanship applies the rules, regulations and instructions of the Ministry of Human Resources and Social Development regarding employment processes, as well as following the rules and regulations of the Statutes of the Higher Council of the Ministry of Education. Each department identifies its staff members before the start of the upcoming academic year. The received applications are evaluated in each academic department. Shortlisted applicants are contacted and interviewed by FSUT online and then by Deanship of Human Resources at their countries. Upon arrival of new staff members, they are oriented about all details of the FSUT and Math Program by their academic departments in FSUT. The new staff is then directed to attend the orientation program prepared by the Deanship of Development and Quality. They are given all the required documents as FSUT guide, procedures guide of faculty members, code of conduct of non-Saudi staff members and executive rules for scientific promotions. Teaching staff joined and organized many community activities. These activities aimed to raise awareness of various health issues and rational medication use. The Faculty administration encourages the teaching staff to participate in national and international conferences, journal clubs and research projects. All teaching staff in FSUT have a highly qualified publication in Q1 and Q2 journals in their specialties. The program encourages teaching staff and students to organize community partnership activities with the public. UT provides a lot of workshops and online lectures for teaching staff organized by the Deanship of Development and Quality or Deanship of E-learning and Distance Education. In addition, evaluation of the performance of the academic staff was performed following specific criteria, and the outcomes of these evaluations must be utilized for the development process. The performance of the teaching staff is regularly measured according to specific questionnaires and the results are usually analysed and feedback is returned to the head of each department and staff members and the results are used for enhancing the teaching performance.

The Mathematics Program has a sufficient number of qualified faculty members of diverse specialists distributed over male and female sections at the main centre and Umluj campus. Tabuk university as well as the mathematics program are aware of the fact that the continual development of faculty

members has a positive impact on the quality of learning outcomes and research production. Therefore, faculty members undergo a variety of training and professional development programs on a regular basis. On the other hand, the teaching performance of the faculty members is evaluated annually.

1. **Report on the standard:**

Mathematic programs should be optimally qualified and have the appropriate expertise to carry out the teaching responsibilities assigned to them, to use appropriate teaching strategies for different types of learning outcomes, and to participate in activities to improve the effectiveness of education. The Qualifications and experience of faculty members associated with program requirements should be indicated. The qualifications and experience of faculty members should be highlighted and a report with a list of strengths, recommendations for improvement and implementation priorities should be provided

Math program measures the suitability of the number of teaching staff by using the following KPIs:

KPI-P-11 Ratio of students to teaching staff.

KPI-P-12 The percentage of teaching staff distribution.

KPI-P-13 Proportion of teaching staff leaving the program.

The Math Program tried hard to retain the distinguished teaching staff by creating a flexible academic environment that applied mechanisms ensuring integrity, fairness, and equality in all its academic and administrative practices.

The alignment between evaluation, selection, interview and recommendation procedures applied in mathematic program and the faculty of sciences and also the university is tightly convergent

FSUT is responsible for the evaluation, selection, interview and recommendation aspects of hiring Saudi and Non-Saudi teaching staff. FSUT is independent in hiring new faculty members. FSUT has developed its recruitment plan according to UT recruitment calendar according to staff members load and academic departments requirements; percentage of faculty members involved in professional development activities during the past year; diversity of the source of PhD certificates for faculty members; diversity of faculty members in terms of nationality and gender; ratio of students to faculty members; and percentage of faculty members who left FSUT in the past year for reasons other than retirement. FSUT has made great efforts to hire qualified faculty members from many countries. In order to fulfil its goal towards Saudization, it has hired more Saudi graduates as teaching assistants, most of whom have pursued graduate study abroad and some of whom have returned after gaining an MSc or PhD to become part of the faculty community. All processes are conducted according to the regulations of UT, which is derived from regulations for employment of Saudis in universities. The UT has clear recruitment processes (5-0-1-1 and 5-0-1-2):

- To identify the needs of academic departments before the start of the upcoming academic year.

- To raise all required academic jobs needs the Dean and the council of FSUT to approve the required qualifications and selection criteria.
- To list all the required jobs and all the terms and requirements involved in each by the Deanship of Human Resources.
- To announce the job on the university's website and via other kinds of media.
- To apply by the applicants on the employment system of UT
- To receive and review the candidates' and forward them to the academic departments for documents verification through the UT electronic system.
- To determine the best applicants based on suitable qualifications and sufficient experience.
- To interview and examine the best applicants.
- To finalize the results of interviews and exams to choose the suitable candidate.
- To approve the choice by department, FSUT and UT councils.

To notify the chosen applicant electronically. UT regularly announced job chances for Saudis on missions and scholarships outside Saudi Arabia all over the world through the Saudis Cultural Offices. In addition, representative delegations visited the major countries for Saudi missions like the US and Europe. FSUT also participates in all international exhibitions that are held by the Ministry of Education all over the world to attract PhD students to work in FSUT when they finish their missions. They are requested to complete an online application form, which are then sorted and transferred to the relevant departments.

5-0-1 The program applies appropriate recruitment policies and procedures to attract faculty members, and retains the distinguished ones.

All the process of recruitment of non-Saudi staff members is conducted under the supervision of Deanship of Human Resources using the general guidelines and policies provided by the Council of Higher Education for employment of non-Saudis in Saudi universities (5-0-1-3).

The committee of recruitment in the Mathematics department is designed and the manuals of all recruitment procedures are provided in 5-0-1-11. The process is as follows is:

1. Identify the needs of academic departments before the start of the upcoming academic year.
2. Raise all required academic jobs to the Dean and the council of FSUT to approve the required qualifications and selection criteria.
3. To list all the required jobs and all the terms and requirements involved in each by the Deanship of Human Resources.
4. Make international announcements through Saudi Cultural Offices around the world.
5. Submitted documents of the candidates are collected and submitted to FSUT then to the academic departments.
6. Conduct online interviews between the head/supervisor of the academic department and the candidates for more investigation of the communication ability of the candidate.
7. List of accepted candidates and to arrange them according to their qualifications.
8. Approve all choices and submit to the shortlists to the Deanship of Human Resources
9. Arrange visits to the countries of candidates by a representative delegation of UT for a formal employment meeting.

10. Finalize the shortlist of candidates by the representative delegation.
11. Endorse offers letters to the Dean of Deanship of Human Resources to successful candidates.

The legitimacy of qualifications held by the applicants (Saudi and non-Saudi) are checked through internal and external procedures. Internally, the UT requires applicants to submit a letter of certificate equivalence approved by the Ministry of Education. Externally, the university relies on the list of the recognized universities available at the Ministry of Education (https://ru.moe.gov.sa/Search). Further verification is made through Saudi Cultural Office in the country of the candidate in view the standards made by the Ministry of Education using the guidelines found on the website: https://www.moe.gov.sa/en/HigherEducation/ExternalEducation/Pages/EqualizeUniversityDegreesGrantedOutsideKSA.aspx. In addition, using the University Certificates' Equalization System: https://eqs.moe.gov.sa/Home/Landing?ReturnUrl=/. The evaluation of staff members depends on a form made by UT administration (5-0-1-4 and 5-0-1-5).

FSUT tries its best to retain the distinguished staff members by giving them all the opportunities to conduct their research, to promote, to share in different units and committees and to be a part of decision making. To meet the demands of providing excellent teaching staff the UT offers internationally competent salaries for Saudi and non-Saudi faculty members at each rank. Distinguished non-Saudi members of rare majors and outstanding experience also receive exceptional incentives ranging from 40% to 100% of the basic salary (5-0-1-6). The Mathematics Program provides an appropriate supportive environment for faculty members that encourage research and professional development, where faculty members are nominated to attend various training workshops as well as get the opportunity to present their research work in the weekly seminar held by the department (5-0-1-7). In 2016 the mathematics program organized an international conference to participate in national and international conferences and workshops (5-0-1-8). At the end of each academic year outstanding faculty members in teaching and research got certificates of excellence (5-0-1-9), and in order to encourage research production, every academic year TU offers generous research fund opportunities for all faculty members at UT (5-0-1-10-J1, 5-0-1-10-J2,5-0-1-10-J3, 5-1-10-J4, 5-0-1-10-J5, 5-0-1-10-J6, 5-0-1-10-J7). All these efforts contribute to attract new highly qualified faculty members and retain the distinguished ones, this has been detailed in KP 13 in the overall analysis.

Table 5.13: KPI – *Proportion of teaching staff leaving the program.*

NCAAA KPI Reference Number: KPI-P-13
Description:
Proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	1.5%	less than 5%	7.5%	less than 5%	6.45%
Umluj	6%	less than 5%	8.5%	less than 5%	

Analysis:

The Mathematics Program puts huge efforts to retain the distinguished teaching staff through providing an appropriate supportive environment for faculty members that encourage research and professional development. In addition, faculty members are regularly nominated to attend various training workshops as well as offered the opportunity to present their research work in the weekly seminar held by the department. At the end of each academic year outstanding faculty members in teaching and research get certificates of excellence in research and teaching as well. Also in order to encourage research production, every academic year UT offers generous research fund opportunities for all faculty members at UT. In addition UT offers internationally competent salaries for Saudi and non-Saudi faculty members at each rank. Distinguished non-Saudi members of rare majors and outstanding experience also receive exceptional incentives ranging from 40% to 100% of the basic salary. Without all these efforts of the mathematics program and the UT the value of this KPI would not be lower than the external benchmark which was established decades before the UT.

At Umluj campus the workload is quite high due to the shortage in teaching staff and the resources need more enhancement as well, beside the fact that Umluj is a quite small city and with limited public services. These are the main factors that negatively affect the retaining of teaching staff at Umluj campus.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Provide Umluj campus with all the learning and research resources and facilities as well as all the needed services.
3. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the Percentage of full-time faculty members who published at least one research

2. How was the benchmark calculated?

Total teaching staff leaving the program for reasons other than reaching the age of retirement divided by total number of full time teaching staff.

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

In order to fulfil its goal towards Saudization, it has hired more Saudi graduates as teaching assistants, most of whom have pursued graduate study abroad and some of whom have returned after gaining an MSc or PhD to become part of the faculty community. All processes are conducted according to the regulations of UT, which is derived from regulations for employment of Saudis in universities. The UT has clear recruitment processes (5-0-1-1 and 5-0-1-2):

5-0-2 The program has an adequate number of faculty members at all sites where it is offered (e.g., male and female student sections, branches).

To achieve the Math program educational mission, faculty teaching load is one of the criteria used to determine the need to recruit additional faculty members. The overall teaching load is shared among the faculty members of a department based on the requirements in that department, taking into account the nature of teaching requirements in different fields of study, and consideration of the general ranges of teaching load for various categories of faculty members. Teaching load distribution is handled by the department heads/supervisors, who have to ensure that the teaching staff have equitable loads. Nevertheless, in certain specialties where equity cannot be established, A specific teaching load has been set for each academic rank that is followed at all public universities in Saudi Arabia. The Mathematics Program is offered in two sections; male and female. Both are located in the main campus of UT in two different buildings. The teaching staff in FSUT is specialized in all disciplines of Math (5-0-2). In case of an increasing number of students, the Math program solves this problem by increasing the number of collaborators. The male teaching staff are teaching in the both sections

In the Mathematics Program, there are 1390 enrolled students (527 male and 863 female) and 78 teaching staff (40 male and 38 female) from several subspecialties. The program has 45 (30 male and 15 female) faculty members with doctoral degrees, as shown in table 5.2 shows the distribution of faculty members.

Table 5.2: Faculty members distribution over the different campuses, and the ratio of students to faculty members.

	NCAAA KPI Reference Number: KPI-P-12 Percentage of teaching staff distribution based on: a. Gender. b. Branches. c. Academic Ranking.								
	Actual Benchmark		Target Benchmark		Internal Benchmark		New Target Benchmark		External Benchmarking
	Main	Umluj	Main	Umluj	Main	Umluj	Main	Umluj	

M	58.2%	42.9%	50%	50%	64.7%	42.9%	%50	%50	69%
F	41.8%	57.1%	50%	50%	35.3%	57.1%	%50	%50	21%
Prof.	3.6%	7.1%	5%	10%	2%	7.1%	%5	%10	8.1%
Assoc.	14.5%	7.1%	20%	10%	17.6%	7.1%	%20	%20	30.7%
Assis.	52.7%	50%	50%	60%	53.4%	50%	%60	%60	54.8%
Lect.	3.6%	7.1%	15%	10%	3.6%	7.1%	%0	%5	4.8%
Demo.	25.4%	28.5%	10%	10%	25.4%	28.5%	%5	%5	1.6%

KPI-P-12 : the percentage of teaching staff distribution

Although the ratio of students to teaching staff (16:1 main campus; 39:1 Umluj campus). Faculty members at male section in the main campus also take teaching loads at the female campus therefore the overall in main campus is 16:1.

Figure 5.2 shows the results of a survey conducted on faculty members about the appropriateness of the total capacity of the department's teaching rooms to the number of students, the weighted average is found to be 81% which is quite satisfactory.

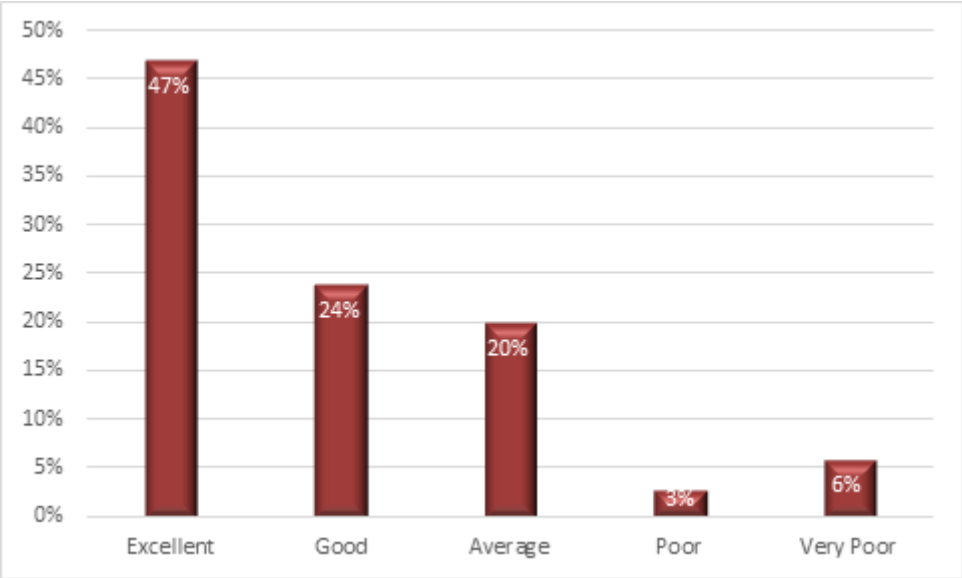

Figure 5.2: Faculty members evaluation of appropriateness of the total capacity of the department's teaching rooms.

5-0-3 The faculty members have the necessary competency (e.g., qualifications, certificates, professional licenses, experience required), and effective teaching skills; and appropriate mechanisms are applied for verification.

The faculty members have the necessary competency. For Saudi teaching staff, the certificates, professional licenses and experience required can be checked by the Deanship of Human Resources from their original universities. Regarding their international certificates, they are verified by Saudi Cultural Offices all over the world. In addition, the Ministry of Education has a University Degree Equivalency System (https://eqs.moe.gov.sa/Home/Landing?ReturnUrl=%2f), that the applicant should use to verify his overseas degrees before applying for a job. For non-Saudi teaching staff, all teaching staff qualifications, certificates, professional licenses and experience required are all verified by Deanship of Human Resources in UT with the help of Saudi Cultural Office in the country of staff members and make certain that all qualifications claimed by staff members are genuine. The documents of the selected candidates are further verified at the time of issuing the Visa for the applicant by the Saudi Consulate in the country of the applicant. The staff members in FSUT came from different countries. They have verified PhD degrees in all specialties of Mathematics. They obtained their PhD degrees from different international colleges around the world. All these facts proved the diversity of culture of the teaching staff in the Math Program.

The mathematics program has well-qualified and experienced faculty members (5-0-3-1), the Mathematics Program also provides academic and professional training programs in collaboration with community services and skills development units at the FSUT (5-0-3-2). Certificates and qualifications of the Saudi and non-Saudi applicants are checked through internal and external procedures. Internally and for applicants with certificates that are issued at one of the local institutions, the UT verifies their certificates through a direct communication with the issuing institutions. On the other hand, international certificates are verified by the Saudi Cultural Offices all over the world (5-0-3-3). In addition, the Ministry of Education has a University Degree Equivalency System (https://eqs.moe.gov.sa/Home/Landing?ReturnUrl=%2f), where applicants should use it to verify their international degrees before applying for the jobs. All the necessary regulations are available at the Ministry of education website:

https://departments.moe.gov.sa/EducationAffairsAgency/RelatedDepartments/offsetcertificates/Pages/default.aspx

5-0-4 The program provides appropriate orientation for new and adjunct teaching staff to ensure their understanding of the nature of the program, their rights, tasks, responsibilities, and workload.

UT has an effective orientation program for the new staff members to guarantee familiarity with the institution and its operating procedures. It is provided by the "My Skills" program provided by the Deanship of Development and Quality (5-0-4-10) for a certificate of attending the orientation program for a new staff member). Starting from the academic year 1442, Deanship of Development and Quality improves the new faculty program to consist of 12 training sessions with a total of 36 hours (5-0-4-11). The program consists of the following workshops:

1. The rights and duties of a faculty member.

2. Students' rights and duties.
3. Manual of tasks.
4. Effective university teaching skills and methods.
5. Student evaluation skills and exam preparation.
6. Effective communication skills.
7. Achieve quality and accreditation standards at the program level.
8. Course specifications and formulation of learning outcomes.
9. Periodic reports of the program, courses and field experience.
10. Learning resources at the university.
11. Scientific research skills.
12. Social responsibility of a faculty member.

At the beginning of the academic year 1442, Deanship of E-learning and Distance Education started a training program called "Atqant" for staff members. The program consists of 60 training workshops in both Arabic and English languages to cover all aspects of Blackboard in the period between 30/8/2020 to 19/11/2020 (5-0-4-12).

In addition, the academic departments in FSUT are responsible for orientation of new staff members. They are oriented about the study plan, assessment methods, their teaching load and academic rules and regulations. The new staff are made aware of the support services available at FSUT and UT.

New faculty members are advised by the HOD as well as the head of the academic advisory committee at the mathematics program, in order to introduce them to the nature of the program, their rights and responsibilities and learning assessment and delivery of lectures as well as the reporting mechanisms followed by the program. On the other hand, there is an orientation program that is offered in collaboration with the community services and skills development unit at the faculty (5-0-4-13, 5-0-4-14, 5-0-4-15).

Upon arrival of new teaching staff to Tabuk, the Deanship of Human Resources provides them with airport reception and temporary hotels' accommodation. They are handled a copy of Math Program handbook (5-0-4-1), quality assurance manual of Math Program (5-0-4-2), the guide of the academic department (5-0-4-3), UT procedures guide of faculty members (5-0-4-4), Guides of Saudi and non-Saudi faculty members (5-0-4-5 and 5-0-4-6), Ministry of Education code of conduct (5-0-4-7), Executive rules for scientific promotions (5-0-4-8) and UT Regulations of Faculty Members Grievances (5-0-4-9). The Staff Member Handbook helps staff members to learn about their rights and duties, and aims to contribute to improve the working environment, strengthen their commitment and increase their efforts, in order to achieve the university's objectives. The handbook explains staff duties, staff rights and benefits, promotion, and the termination of service. Administrative staff helps the new faculty member to get UT-ID, UT email and accounts on academic systems (MyUT) and electronic systems of UT (Sahl systems). They also help the new staff to order their new computer, printer and the required documents to be ready to start their duties in teaching as soon as possible.

5-0-6 The teaching staff regularly participate in academic activities (e.g., participation in conferences and group discussions, research projects, arbitration of theses and research) to ensure their awareness of the latest developments in their fields of specialization; and their

participation in these activities and scientific production are considered in their criteria for evaluation and promotion.

Every year, staff members in FSUT apply for research funds provided by national and international agencies (5-0-1-10-J1, 5-0-1-10-J2,5-0-1-10-J3, 5-1-10-J4, 5-0-1-10-J5, 5-0-1-10-J6, 5-0-1-10-J7). Staff members managed to win funds in academic years provided by Deanship of Scientific Research in UT (5-0-6-1). FSUT, in cooperation with the Deanship of Development and Quality, started the training program tailored for staff members of FSUT. The program includes training workshops for different areas such as teaching and learning, research skills, results of new research, quality control and programs accreditation. Many excellence rewards are attributed to staff members (5-0-6-2). Staff members are participating in national and international conferences to maintain up-to-date information in the field of Mathematics (5-0-6-3-C1, 5-0-6-3-C2). One of the major criteria for evaluation of staff members' performance is the transfer of the latest advances in science in the field of specialization to their work in the faculty and training (5-0-6-3).

5-0-7 Faculty members effectively participate in research activities and scientific production; and their participation in these activities is considered as one of the criteria for their evaluation and promotion.

At the end of each academic year the head of each academic department prepared the evaluation forms of staff members' performance using the forms of Deanship of Human Resources in UT. The form for evaluation of Staff members consists of a part that evaluates their participation in training programs (5-0-7-1). During the orientation program, faculty members are oriented about the institutional promotion policies (5-0-4-8). The basic criteria for faculty promotion are published research work in peer reviewed journals especially those listed in ISI and Scopus. The published research is given 60% of the points of the promotion that involves research that is presented in conferences. Weak performance faculty members are promoted for training programs and workshops that can help them for further improvement.

Regarding promotion of faculty members, the academic promotion guide is available online (https://www.ut.edu.sa/ar/web/vrgssr/-1). It presents the minimum requirements to be eligible for promotion and clearly describes the promotion process. The promotion process is as follows:

1- The departmental committee receives and studies the candidate’s qualifications and skills and ensures that all required documents supporting the application are available and that the application is complete.

2- After the department and the faculty council approve the candidate eligibility, the case is forwarded to UT Scientific Council.

B- The Scientific Council will Appoint the UT promotion committee.

2- Select international scholars known in the field of the applicant to review the promotion case and provide their independent and professional opinion on the candidate’s qualifications, considering his profile in teaching, research and community services.

3- The findings and recommendation will then be presented to the Scientific Council and their final decision will be forwarded to the Rector of the University for final approval.

The process is completely conducted electronically online, applicants upload the necessary documents via the Sahel website (https://gate.ut.edu.sa/sahelv2/)

The program has highly skilled teaching and adjunct staff with strong experience in teaching and research (5-0-5-1), table 5.2. Faculty members participate in academic activities in various forms, including participation and presenting in national and international conferences (5-0-6-3-C1). The mathematics program holds weekly seminars (5-0-6-3-C2) delivered by faculty members at the mathematics program, the objective of these seminars is to encourage research activities in the department as well as keeping the postgraduate students updated with the current research in the field. Faculty members' activities at department and faculty levels are regularly published at the faculty and department websites. These activities are used as one of the criteria for faculty members evaluation (5-0-1-4,5-0-1-5) as well as used for promotions of faculty members (5-0-1-8). The program also has a high research publication profile where the number of refereed publications in main campus and in umluj branches (5-0-7-2) in which during the last three years the total number of publications is 188). The publications and citation profiles at the mathematics department is shown in the tables 5.3 and 5.4 below:

Table 5.2: The publications profile at the mathematics department during 2018-2020.

Year	Main		Umluj		Total
2020	78	7	2	6	93
2019	57	6	2	4	70
2018	39	1	4	1	45
Total	174	14	8	11	208

Table 5.3: The citation profile at the mathematics department during 2018-2020.

Year	Main		Umluj		Total
2020	1298	28	118	8	1452
2019	915	12	112	5	1044
2018	625	8	111	1	745
Total	2838	48	341	14	3241

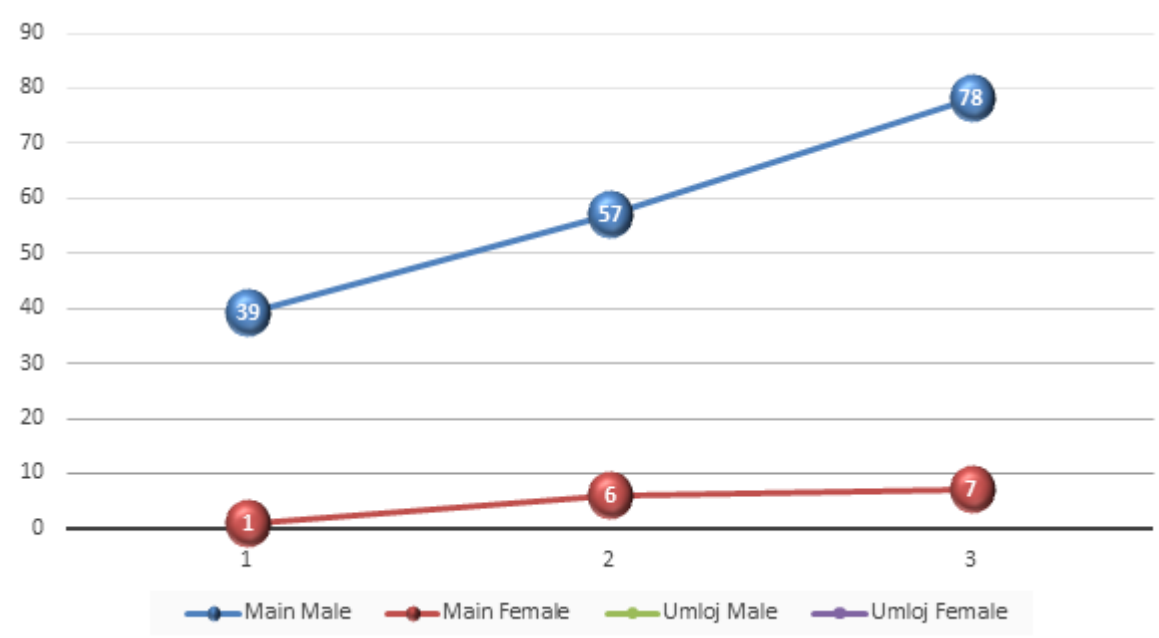

Figure 5.3: The time evolution of research production during 2018-2020.

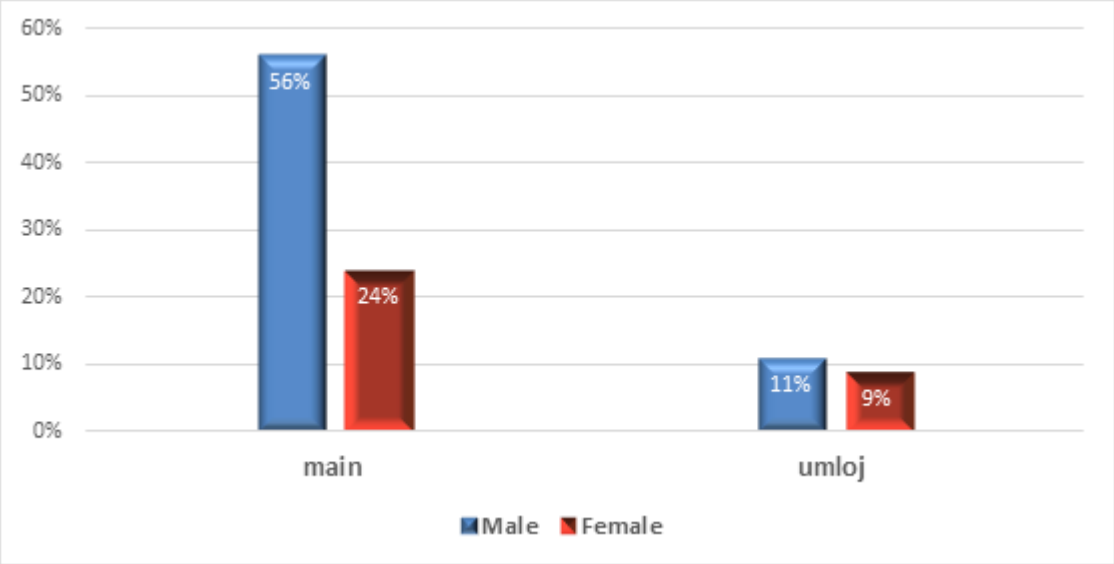

Figure 5.4: Distribution of faculty members with PhD qualification over sites and genders.

It is clear from figure 5.3 shows the evolution pattern of research production at the mathematics department, The overall research production is in a continual progression at all campuses, faculty members at the main male campus have the highest progression rate and also has the highest number of PhD holders 56% of the total PhD holders at the mathematics department as shown in figure 5.4. The mathematics program needs to hire more PhD holders at Umluj campus in order to meet the needs of the students currently enrolled in the program and also increase the research production. The research activity of faculty members is also considered one of the criteria for their evaluation and promotion (5-0-1-4, 5-0-1-5)

Table 5.14: KPI – *Percentage of faculty members active in research .*

NCAAA KPI Reference Number: KPI-P-14

Description:

Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	51%	60%	50%	70%	95 %
Umluj	15%	20%	10%	20%	

Analysis:

The average percentage of full-time faculty members who published at least one research during the previous year is 51%. In the calculation of this KPI all the teaching staff including lecturer are

included. That's why the value of the KPI seems to be lower than the external benchmark and slightly higher than the internal benchmark if lecturer are excluded the value of the KPI will be over 90%. The mathematics program provides an appropriate supportive environment for faculty members that encourage research and professional development, where faculty members are encouraged to attend various training workshops as well as get the opportunity to present their research work in the weekly seminar held by the department. At the end of each academic year outstanding faculty members in teaching and research get certificates of excellence in research and teaching as well. Also in order to encourage research production, every academic year UT offers generous research fund opportunities for all faculty members at UT.

The data shows that the percentage of full-time faculty members who published at least one research during this year at the main campus is higher than umluj campus that is due to the lack of adequate research resources at umluj campus, also the shortage in teaching staff at Umluj campus results in increasing the workload of faculty members which in turns results in a negative impact on their research productivity. In comparison to the external benchmark the citation rate at the main campus is quite adequate, considering the fact that the mathematics program at KKU was established decades before the mathematics program at UT, we infer the amount of efforts the mathematics program as well as UT are putting in encouraging research activities and providing adequate environment to conduct research, also reflects the commitment of faculty members to be involved in research activities.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Provide Umluj campus with all the learning and research resources and facilities as well as all the needed services.
3. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.
4. Develop and implement a special training program for lecturers to enhance their research skills.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the Percentage of full-time faculty members who published at least one research

2. How was the benchmark calculated?

Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program.

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Table5.15: KPI – *Rate of published research per faculty member.*

NCAAA KPI Reference Number: KPI-P-15 Description: The average number of refereed and/or published research per faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year).					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Main	0.5:1	1:1	0.5:1	1:1	5:1
Umluj	0.2:1	0.5:1	1:1	1:1	

Analysis

The average number of referred or published research per faculty member for the mathematics program is 0.5:1 which. In the calculation of this KPI all the teaching staff including lecturer are included. That's why the value of the KPI seems to be lower than the external benchmark and slightly higher than the internal benchmark if lecturer are excluded the value of the KPI will be over 3 publications per faculty member. The mathematics program provides an appropriate supportive environment for faculty members that encourage research and professional development, where faculty members are encouraged to attend various training workshops as well as get the opportunity to present their research work in the weekly seminar held by the department. At the end of each academic year outstanding faculty members in teaching and research get certificates of excellence in research and teaching as well. Also in order to encourage research production, every academic year UT offers generous research fund opportunities for all faculty members at UT.

The data shows that the percentage of full-time faculty members who published at least one research during this year at the main campus is higher than umluj campus that is due to the lack of adequate research resources at umluj campus, also the shortage in teaching staff at Umluj campus results in increasing the workload of faculty members which in turns results in a negative impact on their research productivity. In comparison to the external benchmark the citation rate at the main campus is quite adequate, considering the fact that the mathematics program at KKU was established decades before the mathematics program at UT, we infer the amount of efforts the mathematics program as well as UT are putting in encouraging research activities and providing adequate environment to conduct research, also reflects the commitment of faculty members to be involved in research activities.

Recommendations:

1. The mathematics program should encourage research activities at Umluj campus as well as all other sites.
2. The mathematics program should have a plan in place to retain the current staff members especially those who are active in research.
3. The mathematics program should recruit more faculty members at UMluj campus that have a high research profile.
4. The program should provide more professional training in research for all members, especially at Umloj Campus.
5. Develop and implement a special training program for lecturers to enhance their research skills.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the average number of refereed and/or published research per faculty member during the year

2. How was the benchmark calculated?

The total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Table5.16: KPI – *Citations rate in refereed journals per faculty member*

NCAAA KPI Reference Number: KPI-P-16

Description:

The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published.

Campus	Actual Benchmark	Target Benchmark	Internal Benchmark	New Target Benchmark	External Benchmark
Main	21:1	30:1	17:1	30:1	25:1
Umluj	10:1	10:1	8:1	15:1	

Analysis:

Citations rate in refereed journals per faculty member at the main campus is higher than Umluj campus, the main underlying reason is the lack of adequate research resources at umluj campus, as well as the shortage in teaching staff at Umluj campus which in turns results in increasing the workload of faculty members and consequently results in a reduction in the number and quality of their research production. In comparison to the external benchmark the citation rate at the main campus is quite adequate, considering the fact that the mathematics program at KKU was established decades before the mathematics program at UT, we infer the amount of efforts the mathematics program as well as UT are putting in encouraging research activities and providing adequate environment to conduct research, also reflects the commitment of faculty members to produce high quality research.

On the other hand, at the female section more needs to be done to encourage faculty members to consider producing high quality research work. At Umloj campus the program must have a special plan to get faculty members involved in research work.

Recommendations:

1. The mathematics program should encourage research activities at Umluj campus as well as all other sites.
2. The mathematics program should have a plan in place to retain the current staff members especially those who are active in research.
3. The mathematics program should recruit more faculty members at Umluj campus that have a high research profile.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure beneficiaries satisfaction with the adequacy and diversity of learning resources (references, journals, database etc.).

2. How was the benchmark calculated?

The average number of citations in the previous year in refereed journals from published research divided by the total number of full time faculty members.

3. Name of the internal benchmark provider?

The scientific research committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

5-0-8 Teaching staff participate in community partnership activities; and their participation in these activities is considered as one of the criteria for their evaluation and promotion.

Teaching staff joined and organized many community partnership activities. These activities aimed to raise awareness in pure and applied mathematics sciences use. The activities were directed to Tabuk community and school students as well. The partnership with Al-Ghad International Colleges with Tabuk university provides the exchange of skills in all programs and especially in the Math program(5-0-8-1). The Mathematics program in collaboration with the faculty's community services and skills development unit participates in community activities such as school visits to orient the students about the role of mathematics in real life (5-0-4-14). Due to the weak presence of the mathematics department in the community services, the mathematics Program is planning to get faculty members more involved in community services, by encouraging them through different means.

5-0-9 Teaching staff participate in professional and academic development programs in accordance with a plan that meets their needs and contributes to the development of their performance.

FSUT seeks to develop its staff by providing many educational and technical courses and workshops to develop their skills and improve the quality of their learning and education. Different types of training workshops have been held for the development of faculty members through the Deanship of Development and Quality, the Deanship of E-learning and Distance Education and the Training Unit in FPUT. All faculty members are expected to stay current in their fields of expertise and maintain satisfactory levels of job description. In order to ensure that the faculty member has appropriate qualification and experience to meet their teaching responsibilities, workshops and seminars are held by Deanship of Development and Quality in UT through "My Skills" program or by Deanship of E-learning and Distance Education through "Atqant" program. These workshops and seminars are provided to enhance a variety of professions including teaching strategies, assessment methods, leadership and research skills. For the academic year 1442, Deanship of Development and Quality designed programs for training all staff members in UT to improve their skill. It consists of 9 programs divided into 74 training workshops with a total of 230 training hours. The training includes all fields including

- Women leadership program (5 training – 17 hours).
- New faculty program (12 training – 36 hours).
- Quality assurance practices program for quality committees in academic programs (6 trainings – 18 hours).
- Program for developing teaching performance skills in communication, thinking and scientific research (3 trainings – 9 hours).
- Faculty development program (13 training – 39 hours).

- Quality work program (7 training – 46 hours).
- Academic programs accreditation (5 training – 21 hours).
- Academic leadership program (4 Training – 12 hours).
- Advanced supervisory leadership program for heads and supervisors of scientific departments (10 training – 32 hours).

All staff at the Mathematics Program receive necessary training which is provided to them in collaboration with the community services and skills development unit as well as the deanship of development and quality at UT. The objective of these activities is to develop and improve the professional and academic performance of the faculty members, Faculty members are nominated to these activities by the HOD based on their needs and role in the program and they could improve their CV by many attendance participation certificate (5-0-9-1)

5-0-10 Teaching staff participate in assessment and development activities of the program and institution.

Teaching staff is an integral part of the Mathematics Program. They are participating in the assessment and development activities. All committees in FSUT that deal with assessment of activity of Math Program or making plans for development are formed of staff members. Therefore, all assessment and development are made by staff members. Annual Math Program report is prepared by a committee formed of the program coordinator, Vice-Deans and heads of departments. The annual report measures all the actions that take place during the whole academic year with statistical analysis and comparison with previous academic years. At the end of the report the committee members write an improvement plan for the next year. At the course level, all teaching staff write their course reports at the end of each semester. The course report contains all information about the conduction of each course throughout the whole semester with statistical analysis for students' achievements and measurement of learning outcomes. The last part contains an improvement plan to overcome all obstacles that are faced during teaching the course. The strategic plan and the self-study report of the program, that contain a complete assessment of the program, is prepared by committees that are formed of all faculty members in FSUT. Finally, SSRP is prepared by participation of the majority of faculty members in the Mathematics Program. (5-0-10-1, 5-0-10-2, 5-0-10-3, 5-0-10-4)

5-0-11 Effective mechanisms are applied to evaluate the adequacy and quality of the services provided to the teaching staff and to measure their satisfaction with them.

The satisfaction of faculty members about the Math Program and available resources and facilities are evaluated regularly through questionnaires, which are especially designed for FSUT and approved by the FSUT council. The reports and feedback on these surveys are communicated regularly to the FSUT council for assessment of satisfaction and planning for improvement. The results of the surveys should be discussed by the Math department council to clarify strengths, weaknesses and recommendations for improvement.

All committees at the mathematics department are involved in assessing, and continual review of the program, the results of these assessments are realized through annual action plans, accordingly a comprehensive annual program report is prepared and submitted to the vice dean of quality assurance at the FSUT after being approved by the department council. Faculty members are also involved in assessment of other programs in UT (5-0-10), as well as providing professional development activities through workshops which target teaching staff not only at the Mathematics Program but also to all teaching staff at Tabuk University.

The program has evaluation procedures in place to assess the adequacy and quality of the services provided to faculty members where a comprehensive faculty member questionnaire is conducted every academic year to measure faculty members satisfaction about all the services provided to them as well as obtain their proposals for improvement (5-0-11-1). Figure 5.5 shows a result of a survey conducted to assess the adequacy and quality of services provided to faculty members, and figure 5.6 shows a result of a survey conducted to measure the satisfaction of faculty members on the quality of services and infrastructure.

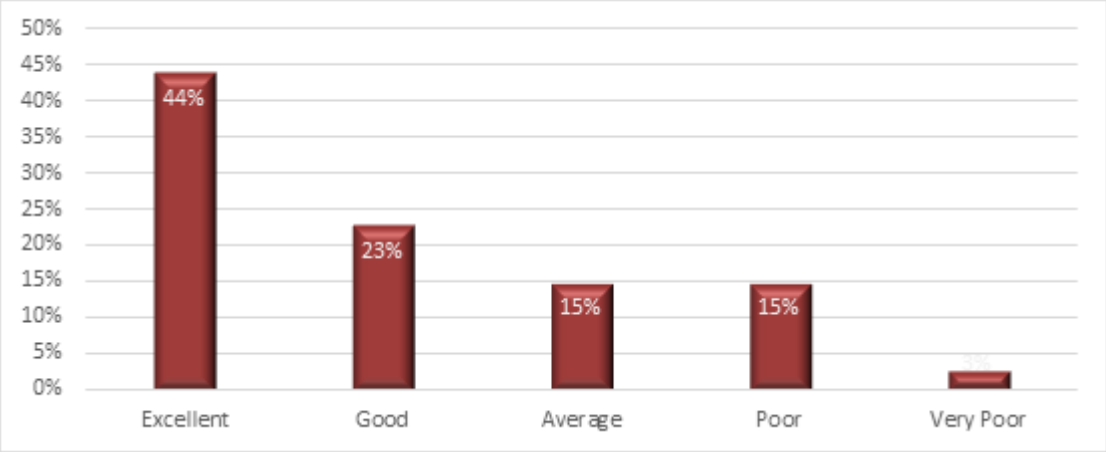

Figure 5.5: Survey results of faculty members satisfaction's about the adequacy and quality of services provided to them

The weighted average of faculty members satisfaction is 78%, action plans will accordingly be prepared and implemented to increase the satisfaction level of faculty members. With regard to computational facilities the UT has a well-established electronic reporting system in place (5-0-11-2).

5-0-12 The performance of the teaching staff is regularly assessed according to specific and published criteria; feedback is provided to them; and the results are used in improving the performance.

The heads/supervisors of academic departments and the Dean evaluate the performance of all faculty members annually. The evaluation consists of all parts of work such as teaching, research and. This evaluation forms the basis for contract renewal of non-Saudi staff. The performance of all faculty members is annually evaluated by the HOD through clear and specific forms (5-0-12-1), all the evaluation criteria are available online to all faculty members 5-0-12-2. Student questionnaires are also taken into consideration in the evaluation. As a result, faculty members obtain feedback about

their performance during the academic year regarding their activities in teaching research and community services. The evaluation then used to plan enhancement of the teaching staff performance.

Overall Evaluation for Quality of the Standard:

Table 4.11: KPI – *Ratio of students to teaching staff .*

NCAAA KPI Reference Number: KPI-P-11 Description: Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program.					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Main	16:1	15:1	17:1	14:1	13:1
Umluj	39:1	25:1	35:1	25:1	

Analysis:

According to international standards, the actual value of this KPI, the main campus, is quite adequate and it is comparable to the corresponding value at KKU. To sustain the stability of this value of the KPI in the coming years, the mathematics program is taking all the necessary action to retain its faculty members as well as recruiting new members to substitute those who retire or leave the program. At Umluj campus there is a shortage in faculty members compared to the number of students enrolled in the program, this situation results in an increase in the workload and consequently decrease in students satisfaction with the academic advising as well as a decrease in research production. To rectify this issue as an urgent solution the mathematics program has adopted online teaching for some courses which will allow faculty members at main campus to carry some teaching load at Umluj branch. Also the mathematics program has 13 (5 males and 8 females) scholarship students specialized in different areas of mathematics that are studying overseas and are expected to join the program during the coming 4 years, which will be enough to fill in the recent shortage in the number of faculty members at Umluj campus.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the percentage of teaching staff distribution at all branches over all ranks for both genders.

2. How was the benchmark calculated?

Ratio of the total number of students to the total number of full-time faculty members.

3. Name of the internal benchmark provider?
The programs and study plans committee

1. Why was this external benchmark provider chosen?
King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider
King Khalid University (KKU)

Table5.12: KPI – *Percentage of teaching staff distribution.*

NCAAA KPI Reference Number: KPI-P-12
Description:
Percentage of teaching staff distribution based on:
a. Gender.
b. Branches.
c. Academic Ranking.

Table 5.2: Faculty members distribution over the different campuses, and the ratio of students to faculty members.

	NCAAA KPI Reference Number: KPI-P-12 Percentage of teaching staff distribution based on: a. Gender. b. Branches. c. Academic Ranking.								
	Actual Benchmark		Target Benchmark		Internal Benchmark		New Target Benchmark		External Benchmarking
	Main	Umluj	Main	Umluj	Main	Umluj	Main	Umluj	
M	58.2%	42.9%	50%	50%	64.7%	42.9%	%50	%50	69%
F	41.8%	57.1%	50%	50%	35.3%	57.1%	%50	%50	21%
Prof.	3.6%	7.1%	5%	10%	2%	7.1%	%5	%10	8.1%
Assoc.	14.5%	7.1%	20%	10%	17.6%	7.1%	%20	%20	30.7%
Assis.	52.7%	50%	50%	60%	53.4%	50%	%60	%60	54.8%
Lect.	3.6%	7.1%	15%	10%	3.6%	7.1%	%0	%5	4.8%

Demo.	25.4%	28.5%	10%	10%	25.4%	28.5%	%5	%5	1.6%

Analysis:

Table 5.12, shows Percentage of teaching staff distribution across the main and Umloj campuses. The total number of students in the main campus is 812 students and at Umluj is 578 but there is a huge difference in the number of faculty members. The number of associate professors at umluj campus is quite low which will have a negative impact on the quality and productivity of research, also the lack of lecturers and demonstrators negatively affect the teaching performance and teaching strategies. The majority of applicants to advertised faculty positions prefer to locate in big cities where all the quality public services are available. Fortunately the whole area is witnessing the establishment of the promising Neom project which is planned to provide the latest technologies and infrastructure to the whole Tabuk province and make it a classworld tourist destination. Therefore, in the coming years vacancies at Umulj campus are expected to be in high demand. Beside that the mathematics program has about 13 (5 males and 8 females) scholarship students specialized in different areas of mathematics that are studying overseas and are expected to join the program during the coming 4 years. Which will be enough to fill in the recent shortage in the number of faculty members at Umluj campus.

The comparison between the actual and internal benchmarks shows a slight decrease in the number of assistant and associate professors at main campus because 1.5% of assistant and associate professors have left the program. At the same time some faculty members have been nominated to full professor rank which results in the increase of the percentage of full professor from 2% to 3.6%,. The percentage of female faculty members at the mathematica program 41.8% at main campus and 57.1 at Umlug campus which are both quite higher than the external benchmark 21%, this fact reflects the high level of commitment of the mathematics program to its core values of gender equity and fairness. The reason that the benchmark percentage of full and associate professors is higher than the corresponding percentage at the mathematics program is because the mathematics program at KKU has been established more than three decades before the mathematics program at UT, which gives KKU more opportunities for establishing structured relations with distinguished national and international scholars. The percentage of demonstrators at the mathematics program is about 23% higher than the external benchmark is the outcome of the mathematics department policy of opening more opportunities and support for junior mathematicians. Due to the efforts the mathematics program is putting to encourage research activities more faculty members have already applied for full professorship and associate professor ranks which will lead to increase in the percentage faculty members at these ranks in the coming year, also mathematics program regularly promotes lecturer and demonstrators to pursue higher education leading to PhD and MSc respectively, thus we expect an increase in the percentage of faculty members at higher ranks next academic year.

Recommendations:

1. Recruit more faculty members at Umluj campus to reduce the workload as well as student to staff members ratio to the international standards.
2. Provide Umluj campus with all the learning and research resources and facilities as well as all the needed services.
3. Implement exceptional policies at Umluj campus to support the efforts of retaining the current faculty members.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure the percentage of teaching staff distribution at all branches over all ranks for both genders.

2. How was the benchmark calculated?

At each branch Number of teaching staff at each rank/gender divided by the total number of teaching staff multiplied by 100.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Overall analysis:

Strengths:

1. Faculty members have the necessary competence and qualifications.
2. Diversity of faculty members in specialisation in pure and applied mathematics as well as in cultural background.
3. Faculty members effectively participate in research activities and scientific production in the main campus.
4. Staff members are provided with necessary orientation and have the chance to attend any professional programs to improve their performance.

Areas for Improvement:

1. The mathematics program must consider increasing the number of teaching staff at Umolj campus, especially in the female section.

2. The Mathematics Program must review its policies and mechanisms to retain teaching staff at all campuses.
3. The Mathematics program should enhance the number of staff in Umluj.
4. The Mathematics Program should prepare and implement plans for community-oriented programs.
5. The program should have appropriate policies in place to encourage members at Umluj campus as well as the main campus to be more involved in research.

Priorities for Improvement:

1. Encouraging staff members to increase their scientific production and participation in international and national conferences through increasing awareness about good practices in research and increasing their skills in scientific writing.
2. Request of employing more staff members in Umluj branch to match the steady increase in the number of students.
3. The Mathematics Program in collaboration with UT should consider adopting adequate policies to retain its faculty members and attract more highly skilled faculty members at all campuses.

Standard 6. Learning Resources, Facilities, and Equipment (Overall Rating: 3)

A. A brief realistic and objective presentation of the present status of the program with respect to Learning Resources, Facilities, and Equipment

Learning resources, facilities and equipment are the cornerstones for providing high quality learning and teaching experiences. The University of Tabuk in arrangement with the Mathematics Program strives to ensure that all required Learning resources facilities and equipment are provided. All the lecture rooms at the Mathematics Program are equipped with data show devices, access to the internet. The University also provides all the required facilities and equipment needed for the proposed extra-curricular activities. All the learning resources are subject to regular evaluation (6-0-1) and upgrading procedures. Although the University has a central library, the faculty of science has currently established a specialized library for all the science departments. With regard to Computer facilities a well-equipped computer facility is provided to the Mathematics Program. In the branch of Umluj, the new building is promising to provide the students with all required learning resources.

Description of the process followed in preparing standard 6:

1. An Infrastructure Committee was formed from members with high experience in quality assurance from both the male and female sections from the main and Umluj campses. The committee is responsible for writing standards 6 and providing all the evidence documents for the standard. .
2. Standard-6 requirements were defined by utilizing NCAAA related documents.
3. A detailed timed plan was developed to implement, manage and monitor the process of collecting evidence and writing standard 6.

B. Report on the standard:

(Provide an analytical and critical report about the evaluation results of the standard based on required data, evidence, and KPIs).

6-0-1The program implements clear policies and procedures that ensure the adequacy and appropriateness of learning resources and services provided to support student learning

University of Tabuk has many educational units, academic and non-academic facilities that enrich the learning resources for the Math program and contribute to supporting the professional development of students. Among the most important non-academic support units available to provide services and academic conducive environment through which students and faculty can work to the best of their abilities and competence and associated with good practices in this standard is the Deanship of Library Affairs, Deanship of e-learning, the Deanship of Information Technology

To provide learning Resources the Deanship addresses the program administrators across the faculty in order to determine the books and references needed by the program in order to provide them (S.6.0.1.1). Student's satisfaction of library services are measured through the following questions

- **The students experience survey:** (S.6.0.1.2)

· The library staff are helpful to me when I need assistance.

· I am satisfied with the quality and extent of materials available for me at the library.

· The library is open at convenient times.

- **In the program evaluation survey:** (S.6.0.1.3)

· Library resources were adequate and available when I needed them.

Faculty of Science University of Tabuk (FSUT) aims to maintain a clean, attractive and well maintained physical environment that meets health, safety, and quality requirements in both main and Umluj campus. It provides well-ventilated classrooms equipped with good smart boards and comfortable seats (6.0.1.4). Moreover, labs are provided with high-tech facilities, and the computer lab has recent high efficient computers connected with the internet. Besides academic activities, there are non-academic activities (cultural and sports) through using the UT nearby buildings. Along with special considerations made for people with disabilities.

Computers and special mathematics programs are purchased periodically according to program's needs (S.6.0.1.5). Also, computers, printers and scanners are also periodically maintained at the faculty of Science (S.6.0.1.6). Moreover, Tabuk university's deanship of student affairs offers smartphones and laptops to students on a monthly payment plan, since smartphones and laptops come with useful apps like BlackBoards, CamScanner, Microsoft programs and university of Tabuk (My service) (S.6.0.1.7).

The Library Research Services Section at the deanship of library affairs (UT) provides assistance to students, faculty, and researchers to access the required research information, such as books, periodicals, government publications, university thesis or from the electronic holdings in the databases or the digital library, even if they are not available in the university library, they are provided through cooperating with other libraries in universities or buying them through publishers (6.0.1.8).

6-0-2 The program implements effective procedures for the management of resources and reference materials needed to support teaching and learning processes.

In order to achieve the ambitious future vision of the program, the program seeks, through the Deanship of Library Affairs, to employ all human, financial, and technical capabilities and best practices used to provide information services and support educational and research process, and making information available, managing its sources, employing information and communication technologies, raising information awareness, and provide beneficiaries with the skills necessary to deal efficiently with information and its multiple channels by achieving quality and excellence in performance.

Due to high demand for some materials, scientific and knowledge references as a source of learning, the Deanship of Library Affairs has adopted a specific work mechanism to regulate access procedures these materials and references are frequently requested by the library visitors from faculty members and students, and it is one of the services that provided by the library for its visitors, and this mechanism is known as the reservation shelf mechanism for the materials and references that are frequently required (Reserved- shelf) (6.0.2.1).

The Deanship of Library Affairs also uses an efficient system for loan and retrieval services in all university libraries. This system allows everyone in the Program to access the library's website even from outside the university and search for all library holdings, including books and their locations, and It is available to all, and the system also provides a number of services to beneficiaries, such as listing a reservation, requesting additional copies, cross-borrowing, search services, purchase proposal.

Moreover, all resources and reference materials owned or operated by the UT, including equipment allocated to individual staff for teaching and research, are inventoried and managed efficiently (S.6.0.2.2). It has allocated a central storage area for the storage of equipment, tools, and other facilities. By an inventory committee of fixed and transferred properties, UT has introduced a consistent policy to control the inventory of equipment and furniture in all of its institutions. For computers, scientific instruments, and other electronic devices, an inventory type is available, which aids in maintaining a full inventory of all equipment in the Faculty of Science. The inventory form is stored at the administrative office and is used to collect all inventory details. In each staff member's MyUT account, there is a record of all inventory materials.

In cooperation with the General Administration of Maintenance and Operations at UT, which is supervised by the Vice-President, the Faculty of Science established a Learning Resources Committee consisting of faculty members and employees from both males and females sections to oversee and facilitate the teaching and learning process (S.6.0.2.3). The learning resources committee has the following responsibilities:

1. Regular assessments at the beginning of each semester for all learning resources and services in both sections which include:

- Classrooms and their facilities as light, smartboards, and adequate seats.

- Electronic resources such as Blackboard, , Up-To-Date and other electronic resources that are used by staff members and students.
- Labs and its equipment.
- Computer labs.
- Non-academic services provided to support student learning (such as religious, sports, and dining facilities) used by staff members and students.
- The offices of the faculty staff members and its facilities.

2. Obtaining the data relevant to the learning resources and facilities obtained by the student's experience surveys and Program evaluation surveys to execute action plans for improvement.

3. Contact the scientific departments to inquire about any learning resources requirements.

4. Write a report about the adequacy of the resources compared with the number of students and staff members and the problems if any.

5. Submit a report to the Vice-dean to contact the higher administration to solve these problems as soon as possible according to UT regulationsIn alignment with the faculty efforts, the Vice President starts to contact the faculties before the end of the semester to set a deadline for the faculties to submit the learning resources requirements. Staff members are strongly committed to provide students with the necessary requirements and resources for teaching and learning before starting each semester. The needed learning resources for each course are submitted to the head/supervisor of the department who collect the requirements of all courses in the department and raise a request to the Learning Resources Committee

Another way to evaluate the adequacy of and appropriateness of learning resources and services provided to support student learning is through the evaluation of student's surveys. The relevant questions can be found in:

Students experience survey: (S.6.0.2.4).

- "Classrooms (including lecture rooms, laboratories etc.) are attractive and comfortable".
- "Student computing facilities are sufficient for my needs".

Program evaluation survey: (S.6.0.2.5).

- "Study materials in courses were up to date useful".
- "Classrooms facilities (for lectures, laboratories, tutorials etc) were of good quality"

6-0-3 The Library has a sufficient number of various resources that are easily accessible and appropriate to the needs of the program and the number of students; are made available in adequate and appropriate times for male and female student sections; and are updated periodically.

The university's Second Strategic Plan as well as the strategic plan of Deanship of Library Affairs

has introduced initiatives for developing the role of libraries in the learning process.

UT has a central library, which is available for sufficient extended hours to ensure access when required by staff members and students. The Deanship of Library Affairs has a structured website which provides many services https://www.ut.edu.sa/ar/web/Deanship-of-library-affairs/home.

An electronic system with search facilities is already available to assist in locating resources within an institution. The Deanship offers an electronic catalog called the "Online Public Access Catalog (OPAC)". The Deanship of Library Affairs introduced the service of Beneficiary Electronic Accounts that facilitates borrowing, renewing borrowing, returning and ordering any of the library holdings (S.6.0.3.1). The Deanship provides a video to help the beneficiaries to create an online account through the link: https://drive.google.com/file/d/1Z5H5nudSKCtr8thCrNXrJPO4_eFT_VkF/view.

Library collections and materials are acquired regularly based on submitted requests from various academic departments which take into account the teaching and learning needs. These are catalogued and referenced in internationally agreed upon coding systems. Libraries stock several copies of books and ensure that at least one copy is always available to the visitors, and materials in great demand are not borrowed for a long time. The central library has clearly displayed its codes of conduct for the users, and students are satisfied with the facilities provided to them (S.6.0.3.2),(S.6.0.3.3). There are many clear guidelines governing the borrowing of materials as well as the imposition of fines for late returns. On the other hand, newly integrated and automated library search has been acquired for on campus and off campus users, and the access has been provided to universally-known online databases. Library and learning resource centres and other facilities and related services are available and sufficient for long hours to ensure the availability of these services according to the needs of users to be awarded three stars . Realizing the fact that students need extended hours for reading and research, the central library has extended its daily opening periods which is currently from 8:00 am to 5:00 pm from Sunday to Thursday and closed on Friday and Saturday. However, the university library opening hours should increase to be from 08:00am to 10:00 pm. Library collections and materials are brought on a regular basis based on submitted requests from staff members which take into account the teaching and learning requirements. These are catalogued and referenced using the international coding systems. It provides access to books and manuscripts. The maximum number of books a staff member can borrow at a time is 15, whereas a student can borrow 10 books. All books are magnetized and bar-coded to ensure secure systems for borrowing. Moreover, access to E-Journals and E-books are available for staff members and students on the Saudi Digital library (http://sdl.edu.sa/) by using the MYUT portal which permits access to many international journals and books. Training programs on the use of the library and the Saudi Digital library are provided via advertising them through university email of the members (S.6.0.3.4). Furthermore, there are two faculty libraries in the faculty of science, one in male section and the other in the female section. These libraries are supervised by the deanship of libraries so the regularities and rules described above are applied. In Umluj, there are also two libraries in the new building that the branch is moving to next year.

6-0-4 The program has specialized electronic resources (e.g., digital references, multimedia, software), and appropriate databases and electronic systems that allow beneficiaries to access

the information, research materials, and scientific journals from within or outside the institution.

As information Technology plays a leading role in all academic and facility services, UT has established two main Deanships, i.e. the Deanship of E-learning and Distance Education and the Deanship of Information Technology The Deanship of E-learning and Distance Education has aimed to change the concept of traditional education, and facilitated access to educational resources and services. Moreover, it has recently introduced a virtual learning environment and course management system, Blackboard. It has held many training courses for faculty members at UT on how to use Blackboard. The Blackboard has the lead in electronic education through the period of curfew due to COVID-19.

All students and staff members in the Mathematics Program have access to Saudi Digital Library through their academic account in the MyUT system (the academic gate of UT). It provides huge sets of e- learning resources. It includes many services like search engines for books and scientific journals. In addition, it provides free access to many databases, international publishers and academic thesis. The Saudi Digital Library is accessible remotely to both students and staff members 24 hours a day / 7 days a week and can be accessed from any place. The Saudi Digital Library can be accessed by smartphones or through desk computers in the offices of staff members or by using the computer lab in the Faculty of science at Tabuk University(S.6.0.4.1).. Deanship of Information Technology leads and facilitates IT-embedded programs and services of the university, with primary focus on academic, administrative and infrastructure technologies https://www.ut.edu.sa/ar/web/Deanship-of-information-technology/home. Each faculty member in the Faculty of science is provided with a LAN desktop computer, printer and laptop. Students can access the internet in their laptops or smartphones from Wi-Fi connection in the whole building and from the computer laboratory.

6-0-5 The program has laboratories, computer and technology equipment, and materials that are suitable to the specialty and sufficient to conduct research and scientific studies according to the program goals; and applies appropriate mechanisms to maintain and update them.

Computer labs are available from the faculty. It includes resources for learning as well as other teaching methods. Furthermore, wireless internet access and a full campus Wi-Fi connection are available to all faculty members.

The Deanship of Information Technology at the University of Tabuk was established in the year 1432 , and since its inception, the Deanship of Information Technology seeks to provide the best technical solutions to build an integrated society in UT and strives to achieve technical excellence at the highest levels and standards for service all university facilities.

This was achieved by developing software systems to automate, departments, centers for easier communication with each other within the framework of the university and improve the information technology knowledge of faculty, staff

And students at the University; thereby, enabling them to accomplish their academic, training,

research and administrative duties through the use of an appropriate mechanism and make the most of information and communication technology and the vast amount of electronic information for the growing applications available on internet and information through other electronic services for scientific studies and research, and the design and implementation of a recent information and communication network at the university.

The program has an appropriate number of desktop computers at a fixed device, laptop, printer and scanner for each faculty member and at least one device in all college offices. The administrative offices of all departments in the college shall be provided with at least a group consisting of a computer, printer, photocopier and scanner for administrative work, as well as for use by faculty members.

The program is equipped with an appropriate number of computers for students and faculty members in the computer laboratories of the faculty where the program provides a computer lab in the male and female sections, equipped with an appropriate number of computers and accessories available for use around the official business hours (S.6.0.5.1). The Deanship of Information Technology supervises these laboratories.

One way to evaluate the adequacy of and appropriateness of lab services provided to support student learning is through the evaluation of student's surveys. The relevant questions can be found in the Program evaluation survey "Computer equipment was sufficient for my needs"(S.6.0.5.2).

The computers in the laboratories and offices of the faculty members and all employees and administrators are provided with updated programs as is done regularly check devices whether old or ineffective, replace them with new synchronized sets, and maintain them as needed where it exists a unit for technical support, it provides technical support services for the program(S.6.0.5.3).

6-0-6 The teaching staff, students, and employees of the program have the appropriate orientation and technical training and support for the effective use of resources and means of learning.

The Deanship of Library Affairs makes satisfactory efforts to educate and guide students and faculty members and train them to use library resources, systems and facilities. Registration in these courses is done electronically through the Deanship of Library Affairs website (S.6.0.6.1). The Deanship of Library Affairs also holds orientation programs for new students to inform them about the libraries in UT as well as digital library systems (S.6.0.6.2). The library's website also provides links for registering for distance electronic databases courses in the Saudi Digital Library (S.6.0.6.3).

The Deanship of Library Affairs is working on holding training courses that focus on electronic services for accrediting libraries at the university on modern technology, where students are trained inside the library on how to search in indexes and reference services and bibliography and introducing them to the mechanism of borrowing and returning books, as well as holding specialized courses on how to benefit from the digital library and information bases (S.6.0.6.4).

Learning resources at the faculty of Science, and consequently at the Mathematics Department, have now acquired good standards in supporting learning and research. This assessment relies on several factors as mentioned in the data-gathering section. Learning resources at the faculty of Science are

going through major development as many projects are continually being initiated. The faculty of Science site is regularly updated with information on activities and programs provided to students and faculty, and increasingly, the e-learning environment has become vital at the faculty to access learning resources.

With conversion to distant teaching due to COVID-19 infection, Deanship of Electronic and Distant Education in UT holds many online training workshops for students and faculty members. The deanship produced guides for working on Blackboard for faculty (S.6.0.6.5) and entering the virtual classroom for students (S.6.0.6.6). The Deanship produced many guides that help both students and staff members in dealing with all functions inside Blackboard.

6-0-7 The program has the suitable classrooms and facilities for its needs.

The classrooms and facilities appropriate for the program are available across the faculty of Science, including class rooms and public facilities (prayer room - cafeteria – medical services) that meet the needs of the program appropriately and are maintained periodically to ensure its quality and to ensure health and safety requirements (S.6.0.7.1).

All classrooms in both main and branch campuses are air-conditioned with suitable lightning and seats. Classrooms are equipped by white-boards, Flat-panel displays or smart boards and projectors that can be connected to laptops for the ease of delivery of learning materials (S.6.0.7.2).

All services such as cleaning, waste disposal, maintenance, and safety services are adequately and effectively implemented by the University's Operation and Maintenance Department (S.6.0.7.3).

When surveying the opinions of users regarding the extent of the beneficiaries 'satisfaction with the quality of the equipment for the studying rooms and labs designated for students through a questionnaire evaluating the program for students of the seventh and eighth level, the results indicate the existence of neutrality in this paragraph, with an agreement of 57.2% (6.0.7.4)

6-0-8 All health, and general and professional safety requirements are available in the facilities, equipment, and the educational and research activities.

The program meets all public and occupational health and safety requirements in facilities, equipment, educational and research activities through the achievement of security and safety factors in all the buildings that contain the program and its facilities through the Operation and Maintenance Department, which has been entrusted with the maintenance of all buildings and facilities of the university and operating its mechanical and electrical equipment with high efficiency in order to make maximum use of all its equipment and provide the necessary technical support for what the university facilities need in a timely manner through annual plans for the periodic maintenance of all facilities (S.6.0.8.1).

The program also provides various civil protection means for the program's activities and provides qualified human cadres to carry out civil defense work, thus achieving the facilities, equipment, educational and research activities. health and safety requirements with adequate and appropriate training for users (S.6.0.8.2).

There are safety rules in effect for using computer labs and facilities, which are posted in the labs. Every semester's first lab session covers the lab's safety rules as well as how to act in hazardous situations (S.6.0.8.3) (S.6.0.8.4) (S.6.0.8.5).

6-0-9 Standards for safety, environmental conservation, and hazardous waste disposal are applied efficiently and effectively

The program applies standards of safety, environmental preservation and waste disposal through the university. The permanent committee for the disposal of chemicals and waste was formed to follow up on the disposal of chemicals and waste **(S.6.0.9.1)**.
It is available in the program building through the university; water infrastructure, sewage network, and public health are maintained through immediate and periodic maintenance. The program works through the faculty to monitor, follow up, report problems and direct operation and maintenance priorities.

The program is keen and interested in providing a healthy, attractive and clean environment in the program building and in coordination with the Maintenance Department in the faculty and university to maintain clean and decent buildings and roads, where waste is disposed of in accordance with the hygiene procedures in force in the college and university. **(S.6.0.9.2)**
The program applies safety guidelines, environmental preservation and waste disposal in accordance with the standards in force in the college and university. The program also implemented protocols and precautions against the Covid19 virus, through the university's protocols against the virus. **(S.6.0.9.3) (S.6.0.9.4)**

6-0-10 The program has a sufficient number of qualified technicians and specialists for the operation and preparation of laboratories.

The Faculty of Science and the Umluj branch both have computer labs with a sufficient number of technicians and IT support team, In the Mathematics program, there are two computer labs in the male section of each campus, and another two labs in the female section of each campus, all equipped

with hardware and software programs to support their users. Both campuses have sufficiently trained technicians.

6-0-11 The program has facilities, equipment, and services suitable for those students, teaching staff, and employees with special needs.

Students, teachers, and other beneficiaries benefitted from the initiative, which offered appropriate facilities and services for people with special needs (disabled people). The buildings on both campuses (main and branches) have a separate entrance for wheelchairs and an elevator to easily move between floors.There are some buildings in the female section that do not have elevators or special accesses for disables. Consequently, the Faculty of science established special contact offices which is easy accessible for disables. This special office is located on the ground floor to provide services for all beneficiaries with special needs. UT provides services for students with special needs. It has a database of all disabled students, indicating the degree and the type of disability that the student has. The UT has created a club for students with special needs and prepares an annual activities plan for them. **(S.6.0.11.1)** **(S.6.0.11.2)** .

6-0-12 The program has the appropriate technologies, services, and environment for courses offered through distance or e-learning according to their own specific standards.

For distance education, the MATH Program, like all other academic programs at UT, uses Blackboard. Due to COVID-19, all MATH Program courses are transferred to Blackboard during the transfer to distant teaching in the second semester of the academic year 1441 and during the academic year 1442. Every member of the teaching team modified their learning resources and materials to work with Blackboard **(S.6.0.9.1)**.

6-0-13 The program evaluates the effectiveness and efficiency of learning resources, facilities, and equipment of all types; and the results are used for improvement

Through a variety of surveys, such as course surveys, field training surveys, student experience surveys, program evaluation surveys, and alumni surveys, the MATH Program continues to measure and evaluate the effectiveness and efficiency of learning resources, facilities, and equipment.

Data is used to describe the processes that are used to evaluate performance in relation to this standard. Data was collected through a review of documents at the department. In addition, by reviewing the Library Deanship Report's annual report, 1441/1442H (S.6.0.13.1).

Evidence about the quality of learning resources provisions and performance indicators are derived from user satisfaction surveys. Also, Key Performance Indicators (KPI) (Table 6.1: KPI 17– Students satisfaction with the learning resources). can be used for the evaluation of the quality. Examples of these KPIs are shown in what follows. In the course evaluation survey, the average rating by the students in response to the statement "The learning resources for the course were available" or "The learning resources were appropriately available" can be consulted. In graduate evaluation surveys, the average rating by the graduates in response to the statement "Learning resources were up to date and very useful" or "The library facilities were useful and available" would be helpful. Also, in staff assessment of the Faculty Readiness for the first semester 1442H can be considered.

Table6.17: KPI – *Students satisfaction with the learning resources*.

NCAAA KPI Reference Number: KPI-P-17 Description: Average beneficiaries satisfaction rate with the adequacy and diversity of learning resources (references, journals, database etc.) on a five point scale in an annual survey.					
Campus	**Actual Benchmark**	**Target Benchmark**	**Internal Benchmark**	**New Target Benchmark**	**External Benchmark**
Main	3.4	3.5	3.4	3.5	3.6
Umluj	2	3.5	2	3.5	
Average	2.7	3.5	2.7	3.5	

Analysis:

At the main campus the weighted average of students satisfaction with the adequacy and diversity of learning resources is 3.4 which indicates an overall agreement on the adequacy of learning resources. At Umluj campus the students' satisfaction rate is 2 which is below the average standard, the low value of this KPI at Umluj campus is basically due to the lack of learning and teaching resources at Umluj the old campus. To overcome this issue the Umluj campus has recently been relocated to a new building where all necessary resources and facilities are/will be provided to students, The UT is still executing its rehabilitation operational plan to enhance the Umluj campus. The difference in student satisfaction between the mathematics program at UT and the mathematics program at KKU is about 2.7 that is due to the condition of Umluj old campus. Also the mathematics program at KKU was established many decades before the mathematics program at UT. In the coming years the satisfaction rate is expected to be similar to the external benchmark due to the efforts of UT in continually improving the quality of learning resources at all campuses.

Recommendations:

1. Provide Umluj campus with a variety of all the needed learning and teaching resources as well as facilities and services.

***Explain:**

1. Why was this internal benchmark provider chosen?

To measure beneficiaries satisfaction with the adequacy and diversity of learning resources (references, journals, database etc.).

2. How was the benchmark calculated?

From the analysis of the survey results.

3. Name of the internal benchmark provider?

The programs and study plans committee

1. Why was this external benchmark provider chosen?

King Khalid University is considered the leading institution in science and technology in the Kingdom of Saudi Arabia. It was chosen because it has recently been accredited by NCAAA, in addition to its collaboration agreement with UT.

2. Name of the external benchmark provider

King Khalid University (KKU)

Committee's recommendation

The main tools needed for the research purposes such as software packages, should be provided to all faculty members in their personal and office computers as these packages are only provided in the computer labs.

Information Technology

The IT unit in UT was an area of improvement, so it is one of the priorities of the strategic plan. Working in accordance with its Strategic Plan, significant additions and enhancements were successful implemented:

1. Installed the latest hardware.
2. Network infrastructure.
3. E-register and MYUT (the new academic systems)
4. New academic systems through the Web site of University.
5. Internet bandwidth expanded and services upgraded.
6. Upgrading to smart classrooms (Activinspire) throughout the University.
7. The Learning Management System (LMS) and E-learning portal.

C. Overall Evaluation for Quality of the Standard:

Strengths:

1. The program has the appropriate technologies for online learning (Blackboard).

2. The program has the suitable classrooms and facilities for its needs.

Areas for Improvement:

1. A departmental Library must have a sufficient specialized number of various hard copy books.

2. Some of the program's buildings in the female section (main campus) should be accessible for all beneficiaries with disabilities. (*Beside the temporary solution that the faculty of science applied for helping disable beneficiaries, the new building of science in the main campus which has all the required facilities is expected to be finished in two years)*

3. All the needed Learning resources and services should be provided to students at Umluj campus. (*has been solved starting from next year*).
4. More teaching staff should be recruited at Umluj campus and main campus.

Priorities for Improvement:

1. More teaching staff should be recruited at Umluj campus and main campus.
2. A departmental Library must be established, and equipped with a sufficient number of various hard copy books.

4. Independent Evaluations

4.1 Describe the process used to obtain an independent opinion on the self-evaluation.

In order to raise the level of quality of Mathematics Program in University of Tabuk (UT), and in order to achieve the first strategic goal of UT to achieve of program accreditations, UT signed a contract for accreditation of Mathematics Program with the National Center for Academic Accreditation and evaluation (NCAAA) in Saudi Arabia. As a requirement for the accreditation by the NCAAA, the Faculty of Science, University of Tabuk (FSUT) assigned Professor Martin Henson as an independent evaluator for its SSRP. The report of the external evaluator was received on 10 June 2021. This report is prepared to respond to the recommendations of the external evaluator.

4.2 List the recommendations and other matters raised by the independent evaluator(s)

1- Develop and implement a campus-recovery plan for the Umluj Campus, aimed to address all areas of current weakness and inequity.

2- Develop and implement a plan for revising the approach to operational planning, with the aim of ensuring continuous improvement.

3- Develop and implement a plan for more structured alumni relations, with an emphasis on activities for mutual benefit.

4- Develop and implement a plan to address current weaknesses in research.

5- Develop and implement a plan for community engagement.

6- Develop and implement a plan for reviewing and upgrading learning resources across campuses, ensuring equity of student experience.

7- Develop and implement a plan to address issues in student retention and progression.

4.3 Provide a response report on recommendations and other matters raised by the independent evaluator(s)

The response report on the reviewer's recommendations is presented in the attached file (response to the external reviewer recommendation).

The program accepted all seven recommendations without any amendment.

Attach *the report(s) by independent evaluator(s).*

5. Conclusion

5.1 List the most important Program aspects that are particularly successful or that demonstrate high quality.

1. The mission, and objectives of the Department and the program are clear and SMART, and consistent with all the Department, Faculty and University's mission statements.

2. The goals and the mission statement are achievable through effective strategies that can be implemented within the level of resources expected to be available.

1. The stakeholder's satisfaction rate for the program's mission and goals is quite high.

2. The Number of teaching staff at the main campus male/ Female section is satisfactory.

3. High integrity, fairness, and equality in all its academic and administrative practices, and between the male and female student sections.

4. The program management applies the systems, regulations, and procedures that are approved by the institution/Faculty in order to close the loop.

5. The program is committed to the institutional policies, standards, and procedures in the design, development and modification of the curriculum.

6. The curriculum design considers fulfilling the program goals and learning outcomes, and the educational, scientific, technical and professional developments in the field of specialization; and is periodically reviewed.

7. Students' learning experiences are reflected well on the students' satisfaction survey.

8. The admission procedure is easy, straightforward and all relevant information is available to students.

9. The program has well-established academic advising and counselling services.

10. The program provides a comprehensive and effective orientation programme for new students to help them become familiar with the kinds of services and facilities available to them.

11. The program familiarizes the students with their rights and responsibilities that they have to comply with during their studies.

12. Faculty members have the necessary competence and qualifications.

13. Diversity of faculty members in specialisation in pure and applied mathematics as well as in cultural background.

14. Faculty members effectively participate in research activities and scientific production in the main campus.

15. Staff members are provided with necessary orientation and have the chance to attend any professional programs to improve their performance.

16. The program has the appropriate technologies for online learning (Blackboard).

17. The program has the suitable classrooms and facilities for its needs.

5.2 List the most important program aspects that have priorities of improvement

1. There is a shortage in the number of teaching staff at Umluj campus, more faculty members need to be recruited for Umluj campus.

2. The class size at Umluj campus is quite big, so the mathematics program should consider reducing the number of students in all the sections.

3. The mathematics program should have action plans in place to keep the graduation rate in continual progression over the coming years.

4. The percentage of achieved indicators for the operational plan is lower than expected in some of the initiatives.

5. The program may build an advisory committee at the department level which includes different stakeholders to contribute to the development, and performance improvement of the program.

6. The program management implements and monitors its role in the community partnership plan of the institution through specific performance indicators.

7. The program should enhance career advising provided to students.

8. The program should establish an effective communication mechanism and professional support to alumni.

6. Action Recommendations

Action recommendations should be based on the priorities for improvement and other matters identified earlier in the SSRP

No.	Action Recommendation	Person(s)/units Responsible	Timelines	Resources Required
1	Develop and implement a campus-recovery plan for the Umluj Campus, aimed to address all areas of current weakness and inequity.	Supervisor of Umluj campus	During the academic year	
2	*Develop and implement a plan for revising the approach to operational planning, with the aim of ensuring continuous improvement.*	The Vice-Dean for Development and Quality	During the first semester	

3	Develop and implement a plan for more structured alumni relations, with an emphasis on activities for mutual benefit.	The program and study plans committee	During the second semester	
4	Develop and implement a plan to address current weaknesses in research.	IT deanship	During the first semester	
5	Develop and implement a plan for community engagement.	Community Outreach committee	During the second semester	
6	Develop and implement a plan for reviewing and upgrading learning resources across campuses, ensuring equity of student experience.	The programs and study plans committee	During the first semester	
7	Develop and implement a plan to address issues in student retention and progression.	The Vice-Dean for Development and Quality	During the academic year	

7. Attachments:

1. A copy of the previous external review or accreditation visit report (if any) and the program's response to its recommendations
2. A detailed list for teaching staff including the following (name, gender, nationality, degree, mode of study (on-campus, distance education), academic rank, general and specific specialty, institution graduated from, list of current courses taught in the current academic year)

3. A report on the self-study process (including membership and terms of reference for committees, sub-committees, working teams, and process for the preparation of each standard).
4. A complete analysis report of the Program KPIs (including trends and comparisons based on gender and branches/locations)
5. Report(s) by independent evaluator (s) on the program self-evaluation

Important Notes:

- Where evidence is provided for each section of the SSRP, such as attachments, it is recommended that these documents be contained in the NCAAA portal.
- Ensure that the attachments provided are relevant and related to the SSRP.
- Use a short descriptive file name to identify the contents of each attachment.
- Photos, excessive letters, emails, notes, memos, surveys, and files are not encouraged. These types of documents can be shown when the review team arrives at the program

8. Evidences: