



T-106  
2022

# Annual Program Report





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## Annual Program Report

Program Name: <b>Bachelor of Science in Applied Mathematics</b>
Program Code (as per Saudi university ranking): <b>054101</b>
Qualification Level: <b>6</b>
Department: <b>Mathematics and Statistics</b>
College: <b>Science</b>
Institution: <b>Imam Mohammad Ibn Saud Islamic University</b>
Academic Year: <b>2022/2023</b>
Main Location: <b>Main campus</b>
Branches offering the Program (if any): <b>None</b>



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## A. Program Statistics

Item	Number
Number of students enrolled in the program	<b>625</b>
Number of students who started the program (in reporting year)	<b>70</b>
Number of students who completed the program	<b>62</b>

## B. Program Assessment

### 1. Program Learning Outcomes Assessment and analysis according to PLOs assessment plan \*

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Targeted Performance (%)	Assessment Results
<b>Knowledge and Understanding</b>				
K1	<b>Understand the fundamentals of Mathematics as a rigorous living discipline in its own right.</b>	<b>D1</b>	<b>15%</b>	<b>4<sup>th</sup> among KSA universities</b>
K2	<b>Describe and outline the development of the application of Mathematics as a language in a wide range of situations relevant to research and industry.</b>	<b>I1</b>	<b>75%</b>	<b>78%</b>
<b>Skills</b>				
S1	<b>Develop critical abilities of an analytical, creative, and problem-solving nature.</b>	<b>D5</b>	<b>70%</b>	<b>74%</b>
S2	<b>Design mathematical models of real-life problems.</b>	<b>I2</b>	<b>70%</b>	<b>75%</b>
S3	<b>Develop critical skills with regard to literature searching, appraising, and evaluating from a variety of sources, and synthesizing the results.</b>	<b>D2</b>	<b>100%</b>	<b>100%</b>





S4	Communicate mathematical ideas orally and in writing, with precision and clarity.	D2	100%	100%
S5	Make efficient use of computer technology and software in solving mathematical problems.	I3	70%	70%
Values, autonomy, and responsibility				
V1	Demonstrate integrity, professional and academic ethics, participation in finding constructive solutions to some societal issues and a commitment to responsible citizenship.	I2	70%	75%
V2	Self-evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently.	D2	100%	100%
V3	Lead teamwork with functional flexibility and effectiveness, and take responsibility for professional development, participating in developing the group's performance, and enhancing the quality of life.	D4	70%	70%

\*Attach a separate report on the program learning outcomes assessment results for male and female sections and for each branch (if any).

Strengths:



- The accurate assessment of the Program Learning Outcomes helps to find and detect the point of weakness in the academic program.
- The Courses Learning Outcomes of the key courses need revising to serve the Program Learning Outcomes.

Aspects that need improvement with priorities:

**More attention MUST be paid to Courses Learning Outcomes, especially those key courses.**

**Revise Courses Learning Outcomes for key courses with paying more attention while delivering these Courses Learning Outcomes to improve Program Learning Outcomes assessment.**

## 2. Evaluation of Courses

Course Code	Course Title	Number of Students Who Evaluated the Course	Percentage of Participants	Evaluation Results (out of 10)	Developmental Recommendations
MAT 101	Calculus (1)	33	82%	6.871	None
MAT 102	Calculus (2)	27	71%	7.765	None
SAT 111	Introd. to Probability & Statistics	36	90%	8.184	None
MAT 203	Calculus (3)	53	67%	7.678	None
MAT 220	Elements of Sets & Structures	42	70%	7.685	None
MAT 251	Math Software	45	75%	7.719	None
MAT 222	Introd. to Number Theory	8	57%	6.58	None
MAT 223	Introd. to Linear Algebra	38	63%	7.836	None
MAT 231	Introd. to Differential Equations	22	78%	8.039	None
SAT 211	Mathematical Statistics	20	67%	7.61	None
MAT 311	Real Analysis	23	76%	8.261	None
MAT 333	Numerical Analysis 1	19	95%	6.264	None



Course Code	Course Title	Number of Students Who Evaluated the Course	Percentage of Participants	Evaluation Results (out of 10)	Developmental Recommendations
MAT 351	Introd. to Operations Research	19	95%	7.771	None
MAT 354	Combinatorics and Graphs	13	85%	8.14	None
MAT 312	Complex Variables	5	88%	8.12	None
MAT 321	Modern Algebra	17	88%	7.465	None
MAT 371	Financial Mathematics	15	83%	8.047	None
MAT 381	Elective Course (1) Mathematical Methods	13	87%	7.543	None
MAT 434	Partial Differential Equations	18	86%	8.307	None
MAT 461	Intro. to Cryptography & Coding	8	88%	9.19	None
MAT 483	Elective Course (2) Topology	10	85%	7.34	None
MAT 433	Numerical Analysis 2	15	89%	6.816	None
MAT 463	Modeling and Simulation	26	90%	8.353	None
MAT 485	Elective Course (3) Numerical Optimization	9	90%	6.867	None
MAT 499	Research Project	3	60%	9.573	None

### 3. Students Evaluation of Program Quality

Evaluation Date: End of 3<sup>rd</sup> Trimester 2022/2023

Number of Participants: 537

Students Feedback

Program Response





Strengths: • <b>Most of the students are satisfied with the delivered courses.</b>	<b>None</b>
Areas of Improvement: • <b>None</b>	<b>None</b>
Suggestions for improvement: • <b>None</b> •	<b>None</b>

#### 4. Scientific research and innovation during the reporting year

Activities Implemented	Number
Published scientific research	<b>394</b>
Current research projects	<b>9</b>
conferences organized by the program	<b>0</b>
Seminars held by the program	<b>4</b>
Conferences attendees	<b>8</b>
Seminars attendees	<b>64</b>
Discussion and analysis of scientific research and innovation activities	
<b>Weakness of some research metrics due to weakness in the female section. However, an improvement has been done in this issue.</b>	

#### 5. Community Partnership

Activities Implemented	Brief Description*
<b>Imam University blood donation campaign in cooperation with King Fahd Medical City</b>	<b>Imam Mohammad Ibn Saud Islamic University organized a blood donation initiative, and it was launched on Sunday, 4/12/202, for two weeks. Its employees, as well as its students, took the initiative to donate blood, which is a noble humanitarian act, as it contributes to saving the lives of thousands of patients who are in dire need of blood transfusions.</b>
<b>Extracurricular activities (Graduation Day)</b>	<b>The department participates in the graduation day organized by the university.</b>
<b>Participation in National Day celebrations</b>	<b>The department participated in National Day celebrations at the university and College of Science levels.</b>
<b>Celebrating Foundation Day</b>	<b>The department participated in the Foundation Day, which celebrates the foundation of the kingdom of Saudi Arabia, at the university and College of Science levels.</b>





Comment on community partnership activities\*\*

**Male Faculty, students, and administrative staff were more involved in these activities.**

\*including timing of implementation, number of participants, and outcomes.

\*\*including overall evaluation of the program's performance in these activities (if any).

#### 6. Other Evaluation (if any) **None**

(e.g., independent reviewer, program advisory committee, and stakeholders  
(e.g., faculty members, alumni, and employers)

Evaluation method:	Date:	Number of Participants:
Summary of Evaluator Review	Program Response	
Strengths: •		
Points for Improvements: •		
Suggestions for development: •		

\*Attach independent reviewer's report and stakeholders' survey reports (if any).





## C. Program Key Performance Indicators (KPIs)

Including the key performance indicators required by the NCAAA.

No	KPI	Targeted Value	Actual Value	Internal Benchmark	Analysis	New Target
1	Percentage of achieved indicators of the program operational plan objectives	80%	82%	92%	Good Achievement	90%
2	Students' Evaluation of quality of learning experience in the program	3.5	3.82	3.6/5	Good Achievement	3.9
3	Students' evaluation of the quality of the courses	3.5	3.72	3.55/5	Good Achievement	3.6
4	Completion rate	0.4	0.35	36%	About 11% of students leave the program	0.4
5	First-year students retention rate	0.5	0.65	64%	About 11% of students leave the program	0.5
6	Students' performance in the professional and/or national examinations	0.5	0.522	52.5%	Good Achievement	0.55
7	Graduates' employability and enrolment in postgraduate programs	0.4	0.21	25%	Needs improvement	0.4
8	Average number of students in the class	17	18	17	Good Achievement	17
9	Employers' evaluation of the program graduate's proficiency	3.5	4	4/5	Good Achievement	4
10	Students' satisfaction with	3.5	3.40	2.86/5	Needs improvement	3.5





	the offered services					
11	Ratio of students to teaching staff	18	32	34	Needs improvement	18
12	Percentage of teaching staff distribution	15% Prof. 25% Assoc. Prof. 50% Assis. Prof. 10% Other	15% Prof. 25% Assoc. Prof. 50% Assis. Prof. 10% Other	15% Prof. 18% Assoc. Prof. 30% Assis. Prof. 37% Other	Good Achievement	15% Prof. 25% Assoc. Prof. 50% Assis. Prof. 10% Other
13	Proportion of teaching staff leaving the program	0.01	0	0%	Good Achievement	0.01
14	Percentage of publications of faculty members	70%	63%	61%	Weakness in the female section	50%
15	Rate of published research per faculty member	2.50	6.35	1.74	Weakness in the female section	2.5
16	Citations rate in refereed journals per faculty member	60	83	50	Weakness in the female section	60
17	Satisfaction of beneficiaries with the learning resources	2.6	2.74	2.5/5	Good Achievement	2.9

Comments on the Program KPIs and Benchmarks results:

- 1) Weakness of some research statistics due to weakness in the female section.
- 2) Multiplication of new programs has increased the ratio of students to teaching staff.

#### D. Challenges and difficulties encountered by the program (if any)

Teaching	New implemented programs or planned future ones need more specialized faculty.
Assessment	None
Guidance and counseling	The increasing number of students needs more involved faculty in the guidance and counseling system.
Learning Resources	None
Faculty	Since many new programs (BSc Applied Statistics, PhD Mathematics, BSc Actuarial Sciences and Financial Mathematics) has been or will be implemented, the



	teaching load per faculty has increased, and there is a need to recruit more faculties.
Research Activities	There is a gap between male and female sections in the research activities but we can see a great improvement now through publications and promotions within female faculties.
Others	None

### E. Program development Plan

No.	Priorities for Improvement	Actions	Action Responsibility
1	Improving the ranking of our students in the Professional Licensing Test for Teachers	Organize trainings for students in the final year of graduation to prepare for the national Teachers Test	Head of Dept.
2	Improving Mathematics Computer skills for our students	Providing mathematical software for all students	Head of Dept.
3	Decreasing the ratio of students to faculty	Recruiting more teaching staff	Head of Dept./University Administration
4	Improving the research metrics	Encouraging faculty to participate in projects and research activities	Head of Dept./Deanship of Scientific Research

Attach any unachieved improvement plans from previous report.

The annual program report needs to be discussed in department council

### F. Approval of Annual Program Report

COUNCIL / COMMITTEE	DEPARTMENT COUNCIL	COLLEGE COUNCIL
REFERENCE NO.	10/1445	11/1445
DATE:	08/04/1445 (23/10/2023)	23/04/1445 (07/11/2023)

