

Matrix of Learning Outcomes for the Study Program with Subjects – Procedures for preparing and updating the study plan/ Department of Mathematics	QF01/0414-3.0
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Faculty	Faculty of Science and Information Technology	Department	Mathematics	Specialization	Mathematics
Study Plan No.	2023–2022	Accreditation date	2022/6/9	The number of program courses	16

Note: This form is for specialty courses only.

The objectives and learning outcomes of the program as stated in the study plan model.

Knowledge

MK1	Knowledge of the main concepts in pure mathematics.
MK2	Knowledge of the main concepts in applied mathematics.
MK3	Explain concepts, principles and theories in the fields of probability and statistics.
MK4	Possession of technological culture related to the fields of mathematics and its applications.

Skills

MS1	Making use of mathematical logic in practical life.
MS2	Engaging scientific methodology as a way of thinking and as a tool in facing problems.
MS3	Applying mathematical software packages in problem solving.
MS4	Being capable of data analysis.
MS5	Develop creative and innovative methods of teaching mathematics.

Competences

MC1	Showing the ability to work under ethical and professional standards within teams.
MC2	Gaining critical thinking and scientific research skills.

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Notes: The learning output number is defined by two digits, the first indicates the target number, and the second number indicates the learning output sequence for each objective.

This form is used exclusively for subjects bearing the specialization number.

Course No.	Course name	Program learning outcomes										
		MK1	MK2	MK3	MK4	MS1	MS2	MS3	MS4	MS5	MC1	MC2
0101102	Calculus (2)	✓	✓	✓				✓	✓		✓	✓
0101104	Calculus (2) for Eng.	✓	✓			✓	✓		✓	✓	✓	✓
0101201	Calculus (3)	✓	✓		✓				✓	✓	✓	✓
0101205	Calculus (3) for Engineering		✓		✓	✓	✓					✓
0101202	Advanced Calculus	✓	✓						✓	✓	✓	✓
0101112	Foundations of Mathematics		✓	✓		✓	✓				✓	✓
0101341	Probability Theory	✓	✓			✓	✓		✓		✓	✓
0101442	Mathematical Statistics	✓	✓			✓	✓	✓			✓	
0101273	Ordinary Differential Equations 1	✓	✓	✓	✓	✓	✓	✓	✓		✓	
0101231	Euclidean Geometry	✓	✓					✓	✓		✓	
0101212	Number Theory		✓		✓	✓	✓					✓

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0101322	Linear Algebra (2)			✓					✓			✓
0101323	Abstract Algebra (1)	✓	✓			✓	✓		✓	✓	✓	✓
0101424	Abstract Algebra (2)	✓	✓	✓		✓	✓				✓	✓
0101370	Graph Theory	✓	✓				✓				✓	✓
0101443	Applied Statistics	✓	✓	✓				✓	✓		✓	
0101272	Numerical Analysis (1)	✓	✓			✓	✓				✓	✓
0101377	Numerical Analysis 2	✓	✓			✓	✓				✓	✓
0101374	Partial Differential Equations			✓					✓			✓
0101475	Applied mathematics		✓		✓	✓	✓					✓
0101455	Special Functions		✓		✓	✓	✓					✓
0101372	Mathematical Modeling 1	✓	✓	✓		✓	✓				✓	✓
0101471	Mathematical Modeling 2			✓					✓			✓
0101376	Linear Programming & Game Theory	✓	✓	✓		✓	✓	✓			✓	✓
0101251	Real Analysis (1)	✓				✓		✓				✓
0101353	Real Analysis (2)				✓					✓	✓	
0101351	Complex Analysis	✓	✓	✓				✓	✓		✓	

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0101452	Functional Analysis		✓		✓				✓		✓	
0101432	Topology	✓	✓	✓		✓	✓				✓	
0101433	Differential Geometry	✓	✓					✓	✓		✓	
0101363	History of Mathematics	✓	✓			✓	✓		✓		✓	✓
0101361	Methods of Teaching Mathematics	✓	✓				✓				✓	✓
0101462	Practical Education in Teaching Mathematics	✓	✓			✓					✓	
0101347	Financial Mathematics	✓	✓			✓	✓	✓			✓	

Approved by the Study Plan Committee	2022-11-13	Committee meeting No.	2
Approved in the department meeting No		Meeting date	
Department head signature		College Dean's signature	