

Programme Catalogue 2026-2027

College Name	College Abbreviation
College of Science	CoS
Department Name (in English)	Department Abbreviation
Department of Mathematics	Math
Department Name (in Kurdish)	
به شى ماتماتيک	
Department Name (in Arabic)	
قسم الرياضيات	
1. Qualification awarded	
Bachelor of Science (BSc) in Mathematics	
2. Length of programme	
4 Years	
3. Number of credits	
240 ECTS credits	
4. Level of qualification according to the National Qualification Framework and the European Qualifications Framework	
National Qualifications Framework (NQF) Level: 6 European Qualifications Framework (EQF) Level: 6	
5. Field(s) of study (e.g. ISCED-F)	
0541 – Mathematics	
6. Specific admission requirements (if applicable)	
Completion of secondary education (science track) with a minimum grade as specified by the University of Duhok.	
7. Specific arrangements for recognition of prior learning (formal, non-formal and informal) (if applicable)	
8. Qualification requirements and regulations, including graduation requirements	
Completion of 240 ECTS credits, including core, elective, and project/internship components.	
9. Profile of the programme	
The BSc in Mathematics aims to provide students with a strong foundation in pure and applied mathematics. The program emphasizes analytical thinking, problem-solving, logical reasoning, and the application of mathematical techniques in interdisciplinary contexts. Students are prepared for careers in education, research, industry, and further graduate studies.	
10. Programme Educational Objectives	
- Equip students with foundational knowledge in core mathematical areas. - Develop analytical, problem-solving, and critical thinking skills. - Enable students to apply mathematics in interdisciplinary and real-world contexts. - Foster independent learning, research skills, and lifelong learning. - Prepare graduates for professional and academic careers with ethical awareness and effective communication skills.	
11. Programme learning outcomes	
- Demonstrate mastery of core mathematical areas such as calculus, linear algebra, real and complex analysis, abstract algebra, and differential equations. - Construct rigorous mathematical proofs and apply logical reasoning to formulate and validate mathematical arguments.	

- Construct rigorous mathematical proofs and apply logical reasoning to formulate and validate mathematical arguments.
- Model and solve real-world problems using appropriate mathematical methods including numerical, statistical, and optimization techniques.
- Use mathematical software and tools (e.g., MATLAB, SPSS) to analyze data, visualize results, and support mathematical investigations.
- Communicate mathematical ideas effectively, both orally and in writing, to peers and non-specialist audiences.
- Apply advanced mathematical concepts in specialized fields such as topology, graph theory, functional analysis, and partial differential equations.
- Demonstrate the ability to learn independently, analyse problems critically, and explore new areas of mathematics through self-directed study or research.
- Collaborate effectively in teams to solve problems, complete projects, and present mathematical findings.
- Understand the historical development and societal role of mathematics and its ethical applications in science and technology.
- Meet the entry requirements for postgraduate education or professional employment in mathematics or related disciplines.

12. Programme structure diagram with credits

Attached below

13. Mode of Study

Full time on campus

14. Examination regulations and grading scale

% Points	Grade
90 – 100	Excellent
80 - < 90	Very Good
70 - < 80	Good
60 - < 70	Medium
50 - < 60	Pass
0 - < 50	Fail

15. Mobility window (if applicable)

16. Work placement(s)/internships (if applicable)

Integrated research project and internship in the final year.

17. Work-based learning (if applicable)

The program integrates applied learning through course-based projects, practical assignments, and case studies that simulate real-world mathematical and statistical problems.

18. Programme director or equivalent

Dr. Nareen Sabih Muhemed Said

19. Occupational profiles of graduates

Occupational profiles include the following, but are not limited to:

- Education Sector
- Research and Higher Education
- Data Science and Statistics Sector
- Industry and Technology Sector
- Banking, Finance, and Business Sector
- Government and Public Sector

20. Access to further studies

MSc and PhD programs in Mathematics and related disciplines.

21. Academic Staff

No	Full Name	Qualification	Academic title	Email
1	Zanyar Anwer Ameen	PhD	Professor	zanyar.ameen@uod.ac
2	Shayma Adil Murad	PhD	Professor	shayma.murad@uod.ac
3	Azhaar Hassan Sallo	PhD	Asst. Professor	azhaar.sallo@uod.ac
4	Nareen Sabih Muhemed Said	PhD	Asst. Professor	nareen.sabih@uod.ac
5	Muhammad Amin Sadiq Murad	PhD	Asst. Professor	muhammad.murad@uod.ac
6	Bewar Ahmad Mahmood	PhD	Asst. Professor	bewar.mahmood@uod.ac
7	Haveen Jalal Ahmed	PhD	Asst. Professor	haveen.ahmed@uod.ac
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13	Alan Mohammed Omar	PhD	Lecturer	alan.omar@uod.ac
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17	Jiyar Jafar Ahmed	MSc	Lecturer	jiyar.ahmed@uod.ac
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21	Maha Waleed Abdulqader	MSc	Asst. Lecturer	maha.abdulqader@uod.ac
22	Dileen Naseradeen Abdulqader	MSc	Asst. Lecturer	dileen.abdulqader@uod.ac
23	Akheenk M.Saleem Buhaadeen	MSc	Asst. Lecturer	akheenk.buhaadeen@uod.ac
24	Fatima Waheed Ali	MSc	Asst. Lecturer	fatima.ali@uod.ac
25	Salih Ibrahim Mohammed	MSc	Asst. Lecturer	salih.mohammed@uod.ac
26	Zahra Abdullah Tanha	MSc	Asst. Lecturer	Zahra.tanha@uod.ac
27	Abduljawad Khairi Anwar	MSc	Asst. Lecturer	abduljawad.anwar@uod.ac
28	Arsalan Shareef Haji	MSc	Asst. Lecturer	arsalan.haji@uod.ac
29	Yousif Abdullah Salih	MSc	Asst. Lecturer	yousif.abdullah@uod.ac
30	Kardo Sulaiman Haso Mirza	MSc	Asst. Lecturer	kardo.haso@uod.ac
31	Dilshad Jundi Khalat	MSc	Asst. Lecturer	dilshad.khalat@uod.ac
32	Mohammed Ageed Mustafa	MSc	Asst. Researcher	mohammed.ageed@uod.ac
33	Awa Ismail Taha Shaheen	BSc	Asst. Researcher	None
34	Peshang Jameel Abdullah	BSc	Asst. Researcher	None

22. Facilities and Resources (Lecture halls, Labs, etc.)

- Lecture halls with modern projection and smart board facilities,

- Mathematics and computing laboratories equipped with MATLAB, SPSS, and other software,
- Library resources including textbooks, reference books, and subject-specific printed materials.

23. Accreditation and recognition

- Accredited by the Kurdistan Regional Government and recognized nationally
- Aligned with the European Credit Transfer and Accumulation System (ECTS)

College of Science
Department of Mathematics

SCI
MATH

Version No.: 1.0
Version Date: 1/9/2026

Study weeks/semester 15

Exam weeks/semester 5

hr/ECTS credit 27

		Semester 1																					
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS	
																	Theoretical	Practical					
		Calculus I	MATH B111C							Core	7	4		2		5	2		6	192	7.1	7	
		Foundation of Mathematics I	MATH-B112C							Core	7	4		2		5	2		6	192	7.1	7	
		Academic Debate	0							Core	4	2				4	2		2	112	4.1	4	
		Computer Skills	MATH-B113H							Core	4	1	2			3	2	1	3	108	4.0	4	
		Kurdology	MATH B114C							Core	4	3				3	2		3	107	4.0	4	
		English Language I	MATH-B115C							Core	4	2				4	2		2	112	4.1	4	
			Total Student Workload hr/day		8.4						Total	30	16	2	4	0	24	12	1	22	823	30.5	30

		Semester 2																					
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS	
																	Theoretical	Practical					
		Calculus II	MATH-B121C	Calculus I	MATH B111C					Core	7	4		2		5	2		6	192	7.1	7	
		Foundation of Mathematics II	MATH-B122C	Foundation of Mathematics I	MATH-B112C					Core	7	4		2		5	2		6	192	7.1	7	
		Discrete Mathematics	MATH-B123C							Core	4	2				4	2		2	112	4.1	4	
		Geometry	MATH-B124C							Core	4	2				4	2		2	112	4.1	4	
		English Language II	MATH-B125C	English Language I	MATH-B115C					Core	4	2				4	2		2	112	4.1	4	
		General Physics	MATH-B126H							Core	4	1	2			3	2	1	3	108	4.0	4	
			Total Student Workload hr/day			8.4					Total	30	15	2	4	0	25	12	1	21	828	30.7	30

		Semester 3																					
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS	
																	Theoretical	Practical					
		Advanced Calculus I	MATH-B211C	Calculus II	MATH-B121C					Core	8	4		2		6	2		6	212	7.9	8	
		Linear Algebra I	MATH-B212C	Discrete Mathematics	MATH-B123C					Core	6	4				5	2		4	162	6.0	6	
		ODEs I	MATH-B213C							Core	6	4				5	2		4	162	6.0	6	
		Financial Mathematics	MATH-B214C	Discrete Mathematics	MATH-B123C					Core	5	4				4	2		4	142	5.3	5	
		Computer Applications	MATH-B215H							Core	5	2	2			4	2	1	4	143	5.3	5	
											0								0	0	0.0	0	
			Total Student Workload hr/day			8.4					Total	30	18	2	2	0	24	10	1	22	821	30.4	30

		Semester 4																					

Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr	Lab. hr/	Tutorial hr	Seminar hr	Self-study hr	Theoretical	Practical	Contact hr	Total hr/term	ECTS	Rounded
		Advanced Calculus II	MATH-B221C	Advanced Calculus I	MATH-B211C					Core	8	4		2		6	2		6	212	7.9	8
		Linear Algebra II	MATH-B222C	Linear Algebra I	MATH-B212C					Core	6	4				5	2		4	162	6.0	6
		ODEs II	MATH-B223C	ODEs I	MATH-B213C					Core	6	4				5	2		4	162	6.0	6
		Probability & Statistics	MATH-B224C							Core	5	4				4	2		4	142	5.3	5
		Computer Programming	MATH-B225H	Computer Applications	MATH-B215H					Core	5	2	2			4	2	1	4	143	5.3	5
											0								0	0	0.0	0
Total Student Workload hr/day											8.4											
Total											30	18	2	2	0	24	10	1	22	821	30.4	30

		Semester 5																					
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS	
																	Theoretical	Practical					
		Mathematical Analysis I	MATH-B311C							Core	7	4		1		6	2		5	197	7.3	7	
		Abstract Algebra I	MATH-B312C							Core	7	4		1		6	2		5	197	7.3	7	
		PDEs I	MATH-B313C	ODEs II	MATH-B223C					Core	6	4				5	2		4	162	6.0	6	
		Numerical Analysis I	MATH-B314H							Core	5	2	2			4	2	1	4	143	5.3	5	
		Mathematical Statistics	MATH-B315C	Probability & Statistics	MATH-B224C					Elective	5	2		1		4	2		3	127	4.7	5	
		Fuzzy Sets	MATH-B326C							Elective	5	2		1		4	2		3	127	4.7	5	
			Total Student Workload hr/day			9.6					Total	35	18	2	4	0	29	12	1	24	953	35.3	35

		Semester 6																					
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS	
																	Theoretical	Practical					
		Mathematical Analysis II	MATH-B321C	Mathematical Analysis I	MATH-B311C					Core	7	4		1		6	2		5	197	7.3	7	
		Abstract Algebra II	MATH-B322C	Abstract Algebra I	MATH-B312C					Core	7	4		1		6	2		5	197	7.3	7	
		PDEs II	MATH-B323C	PDEs I	MATH-B313C					Core	6	4				5	2		4	162	6.0	6	
		Numerical Analysis II	MATH-B324H	Numerical Analysis I	MATH-B314H					Core	5	2	2			4	2	1	4	143	5.3	5	
		Applied Statistics	MATH-B325H	Mathematical Statistics	MATH-B315C					Elective	5	2	2			4	2	1	4	143	5.3	5	
		Operation Research	MATH-B316C							Elective	5	2		1		4	2		3	127	4.7	5	
			Total Student Workload hr/day			9.8					Total	35	18	4	3	0	29	12	2	25	969	35.9	35

		Semester 7																				
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS
																	Theoretical	Practical				
		General Topology	MATH-B411C							Core	7	4				6	2		4	182	6.7	7
		Graph Theory	MATH-B412C							Core	6	4				5	2		4	162	6.0	6
		Functional Analysis	MATH-B413C	Mathematical Analysis II	MATH-B321C					Core	6	4				5	2		4	162	6.0	6

		Optimization	MATH-B414C							Core	6	4				5	2		4	162	6.0	6
		Applied Mathematics	MATH-B415C	PDEs II	MATH-B323C					Elective	5	3				5	2		3	147	5.4	5
											0								0	0	0.0	0
			Total Student Workload hr/day		8.1					Total	30	19	0	0	0	26	10	0	19	815	30.2	30

		Semester 8																					
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS	
																	Theoretical	Practical					
		Complex Analysis	MATH-B421C							Core	7	4				6	2		4	182	6.7	7	
		Internship	MATH-B422F							Core	6	0				8		2	0	162	6.0	6	
		Graduation Project	MATH-B423P							Core	12	2			1	14	2		3	327	12.1	12	
		Special Functions	MATH-B424C							Elective	5	3				4	2		3	127	4.7	5	
		Generative AI Applications	MATH-B425H							Elective	5	2	2			4	2	1	4	143	5.3	5	
		Project Management System	MATH-B426C							Elective	5	3				4	2		3	127	4.7	5	
			Total Student Workload hr/day			10.1					Total	40	14	2	0	1	40	10	3	17	1068	39.6	40

Fall Electives																						
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS
																	Theoretical	Practical				
		Mathematical Statistics	MATH-B315C							Elective	5	2		1		4	2		3	127	4.7	5
		Operation Research	MATH-B316C							Elective	5	2		1		4	2		3	127	4.7	5
		Applied Mathematics	MATH-B415C	PDEs II	MATH-B323C					Elective	5	3				5	2		3	147	5.4	5
											0								0	0	0.0	0
											0								0	0	0.0	0
											0								0	0	0.0	0
											0								0	0	0.0	0
Total											15	7	0	2	0	13	6	0	9	401	14.9	15

Spring Electives																						
Module Name (Kurdish)	Module Name (Arabic)	Module Name	Module Code	Prerequisite 1	Prerequisite 1 Code	Prerequisite 2	Prerequisite 2 Code	Corequisite	Corequisite Code	Type	ECTS	Lecture hr/wk	Lab. hr/wk	Tutorial hr/wk	Seminar hr/wk	Self-study hr/wk	Final Exam hr		Contact hr/wk	Total hr/term	ECTS	Rounded ECTS
																	Theoretical	Practical				
		Applied Statistics	MATH-B325C							Elective	5	2	2			4	2	1	4	143	5.3	5
		Fuzzy Sets	MATH-B326C							Elective	5	2		1		4	2		3	127	4.7	5
		Special Functions	MATH-B424C							Elective	5	3				4	2		3	127	4.7	5
		Generative AI Applications	MATH-B425C							Elective	5	2	2			4	2	1	4	143	5.3	5
		Project Management System	MATH-B426C							Elective	5	3				4	2		3	127	4.7	5
											0								0	0	0.0	0
											0								0	0	0.0	0
Total											25	12	4	1	0	20	10	2	17	667	24.7	25

