

University of Baghdad

جامعة بغداد



Bachelor's Degree (B.Sc.)- Mathematics

بكالوريوس علوم - الرياضيات



جدول المحتويات | Table of Contents

1. Mission & Vision Statements	بيان المهمة والرؤية
2. Program Specification	مواصفات البرنامج
3. Program Goals	أهداف البرنامج
4. Program Student learning outcomes	مخرجات تعلم الطالب
5. Academic Staff	الهيئة التدريسية
6. Credits, Grading and GPA	الاعتمادات والدرجات والمعدل التراكمي
7. Modules	المواد الدراسية
8. Contact	اتصال

1. Mission and Vision Statements

Vision Statement

The Department of Mathematics at the College of Science, University of Baghdad, aims to achieve the highest levels of excellence in the field of mathematics and its assorted skills that serve the international community. Also, the department aim to produce high quality mathematics majors well prepared to continue graduate education with full knowledge.

Mission Statement

The program of the department of mathematics at college of science, university of Baghdad, provides a firm foundation in pure and applied mathematics. It gives a high efficiency education and furnishes the student with Core and necessary subjects in order to develop their problem-solving abilities in professional ways will be beneficial for the community for present and future.

2. Program Specifications

Program Code:	MAT	ECTS:	240
Duration:	4 levels, 8 semesters	Method of Attendance:	Full time

Mathematics is the cornerstone of many important scientific fields, it considered as an essential tool in various sciences, engineering and technology. The department of mathematics at college of science, university of Baghdad have an expert staff with assorted specialties and

advance skills of teaching. Our curriculums confirm a strong building Knowledge for the students in wide area of most Mathematics main subjects.

The curriculum of our department divided into four levels, each level hold two semesters. Level 1 provides the students with fundamental subjects of mathematics which present an introduction to the subjects given in next levels. Level 2, 3 and 4 involving advanced subjects of mathematics with many different applications that develop the student ability in various branches of mathematics. Further, level 4 includes the project of the student in optional subject related to its willingness to search in that field.

3. Program Goals

- The preparation of graduates specializing in mathematics contributes to the service of development in the country.
- Meet the needs of the education sector personnel with high efficiency.
- To encourage excellence in mathematics to work in the department as members of teaching staff in the future.
- Encourage research programs and participate in seminars and scientific conferences.
- To achieve quality and academic accreditation.

4. Student Learning Outcomes

The department offers a bachelor of science in mathematics which assume two main branches, pure and applies mathematics. Additionally, the department establish an efficient curriculum to enable the graduating students be specialist in many jobs and skills.

Outcome 1: *Data Analysis*

Graduates will be able to recognize and analyze assorted data including the statistical data with the ability of solving their related problems.

Outcome 2: *Financial Management*

Graduates will be able to be finance manager in organizations, identify the Core financial environment and institutions and perform analytical review of financial results and plans.

Outcome 3: *Encryption and Decryption*

Graduates will be able to understand and analyze data encryption and decryption standard, also analyze and design encryption and block cipher.

Outcome 4: *Modelling and Simulation*

Graduates will be able to represent and build system understanding, explain and predict relationships among concepts, structures and species.

Outcome 5: *Mathematical Research*

Graduates will be a researcher in many branches of mathematics and its consequences.

Outcome 6: Forensic Analysis

Graduates will be able to apply mathematical knowledge in many determinations related to crimes and accidents such as when and how the crime committed.

Outcome 7: Mathematical Tutor or teacher

Graduates will have a strong Core of many mathematical subjects that enable him to teaching as a tutor or in the organizations.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Baghdad University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs. student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Cumulative Grade Point Average (CGPA)

The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$CGPA = [(1st\ module\ score \times ECTS) + (2nd\ module\ score \times ECTS) + \dots] / 240$$

7. Curriculum / Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hr.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT1101	Calculus I	63	137	8	Core	—
MAT1102	Foundations of Mathematics I	63	137	8	Core	—
MAT1103	Finite Mathematics	63	62	5	Elective	—
MAT1104	Mathematical Physics I	63	37	4	Core	—
UOB103	Computer Skills I	49	26	3	Basic	—
UOB101	Arabic Language I	33	17	2	Supported	—

Semester 2 | 30 ECTS | 1 ECTS = 25 hr.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT1215	Calculus II	63	137	8	Core	MAT1101
MAT1216	Foundations of Mathematics II	63	137	8	Core	MAT1102
MAT1207	Financial Mathematics	63	87	6	Core	—
MAT1218	Mathematical Physics II	63	37	4	Core	MAT1104
UOB104	Democracy and Human Rights	33	17	2	Supported	—
UOB102	English Language I	33	17	2	Supported	—

Semester 3 | 30 ECTS | 1 ECTS = 25 hr.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT2119	Advance Calculus	78	122	8	Core	MAT1215
MAT21110	Linear Algebra I	63	137	8	Core	MAT1103
MAT21111	Probability and Statistics I	63	87	6	Core	MAT1103 MAT1215
MAT21012	Graph Theory	48	52	4	Core	—
UoB208	The Crimes of Ba'ath Regime in Iraq	33	17	2	Supported	—
UOB206	English Language II	33	17	2	Supported	UOB102

Semester 4 | 30 ECTS | 1 ECTS = 25 hr.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT22114	Linear Algebra II	63	137	8	Core	MAT21110
MAT22115	Methods of Solution for O. D. E.	63	87	6	Core	MAT1215
MAT22116	Mathematical Statistics I	63	37	4	Core	MAT21111 MAT2119
MAT22117	Operation Researches	63	37	4	Core	MAT1103
MAT22018	Number Theory	33	42	3	Core	—
UOB207	Computer Skills II	49	26	3	Basic	UOB103
UOB205	Arabic Language II	33	17	2	Supported	UOB101

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT31119	Mathematical Analysis I	63	137	8	Core	MAT1215 MAT1216
MAT31120	Numerical Analysis I	63	137	8	Core	MAT2215
MAT31121	Group Theory	63	62	5	Core	MAT1216
MAT31122	Mathematical Statistics II	63	37	4	Core	MAT22116
MAT31123	Optimization	63	62	5	Core	MAT22017

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT32124	Mathematical Analysis II	63	137	8	Core	MAT3119
MAT32125	Numerical Analysis II	63	137	8	Core	MAT31120
MAT32126	Ring Theory	63	62	5	Core	MAT31121
MAT32127	Statistical Inference	63	62	5	Core	MAT31122
MAT32128	Computation Groups	33	42	3	Core	MAT31121
UOB309	Scientific Research Methodology	18	7	1	Supported	—

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT41129	Complex Analysis I	63	137	8	Core	MAT2119 MAT31119
MAT41130	Theory of Differential Equations	63	87	6	Core	MAT31119 MAT22114 MAT22115
MAT41131	General Topology I	63	87	6	Core	MAT31119
MAT41132	Functional Analysis	63	37	4		MAT32124
MAT41133	Cryptography	63	12	3	Core	MAT21110 MAT32127
MAT41034	Project I	30	45	3	Core	—

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MAT42135	Complex Analysis II	63	137	8	Core	MAT41129
MAT42136	General Topology II	63	87	6	Core	MAT41130
MAT42137	Mathematical Modelling and Simulation	63	87	6	Core	MAT41130
MAT42138	Data Analysis	63	37	4	Core	MAT32127
MAT42139	Methods of Solution for P.D.E.	48	27	3	Core	MAT22115
MAT42134	Project II	33	42	3	Core	MAT41034

8. Contact

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