Ministry of Higher education and Scientific Research

UNIVERSITY OF ANBAR

EDUCATION FOR PURE SCIENCE COLLEGE OF

Department of Mathematics

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Department of Mathematics

CATALOUGE

2020/2021

Prepared by: ……..

Vision

A scientific and educational department that seeks to lead in university education and scientific research locally and globally in a way that contributes to the service of society and achieve sustainable development.

Mission

Excellence in the preparation of educators and researchers knowledgeable and practitioners and professional ethically committed by creating a stimulating environment and associated to the institutions of society

Programme Educational Objectives (CEOs)

Course Description

Courses are coded as follows:

1. Course code and number
2. Course title
3. Parenthesized numerals, e.g., (4-3-1-3), indicate, in order, the credit hours, the classroom hours (1 hour = 1 credit hour), tutorial hours (credit hour = 0), and the laboratory hours (3 hour = 1 credit hour).

Prerequisites, if any, are indicated at the course description. These have been established to assure an adequate and uniform background for students in advanced classes. Occasionally, students may feel they already have the appropriate background for an advanced course because of previous training, transfer credits, or Credit by examination.

Course Numbering System:

Course code = MAT. (for example MAT000 represents one of the course of department requirements in the mathematics)

The CODE consists of specifically three to four english letters which represent the course code and three digits refers to the level as following:-

100-199: First level

200- 299: Second level

300-399: Third level

400-499: Fourth level

If the course is one of the college requirements then the first three or four letters on the course code represent the college code (for example EPS000 is college requirement in the College of Education for Pure Sciences).

If the course is one of the university requirements then the first three or four letters on the course code represent the college university code (for example UOA000 is university requirement in any college).

Total credit hours of courses according to the adopted levels

Courses		Levels				Total
		First	Second	Third	Fourth	
University	Compulsory	-	-	-	-	-
	Elective	7	4	2	6	19
Total		7	4	2	6	
College	Compulsory	7	6	4	4	21
	Elective	4	4	2	0	10
Total		11	10	6	4	31
Department	Compulsory	21	24	28	27	100
	Elective	0	2	4	6	12
Total		21	26	32	33	112
Total		39	40	40	43	162

Graduation Requirements

Requirements	Credit
University Requirements	19
College Requirements	31
Department Requirements	100
Elective Courses	12
Total	162

University Requirements: 16 credit hours

Course code	Course Title	Credit hours	Weekly hours	Prerequisite
UOA140	English Language-I	2	2	
UOA240	English Language-II	2	2	
UOA340	English Language-III	2	2	
UOA440	English Language-IV	2	2	
UOA135	Human Rights	1	1	
UOA136	Freedom and democracy	1	1	
UOA137	Aabic Language	2	2	
UOA141	Computer science	2	2	
UOA241	Programming	2	2	
Total		16	16	

College Requirements: 22 credit hours
Department Requirements: ….. credit hours

Course Code	Course Title	Credit hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab	
EPS101	Educational Psychology	2	2			
EPS102	Fundamentals of Education	2	2			
EPS202	General Psychology	2	2			
EPS201	Educational Administration	2	2			
EPS211	Methods of Scientific Research	2	2			
EPS311	Curricula and Methodology	2	2			
EPS312	Educational Counselling and Psychological Health	2	2			
EPS411	Measurement and Evaluation	2	2			
EPS412	Teaching Practicum	2	2			
EPS413	School Practicum	2		4		
EPS414	Classroom Observation	2	2			
Total		22	20	4		

Prerequisite	Weekly hours			Credit hours	Course Title	Course Code
	Lab	Tut	Lec			
		3	2	4	Calculus 1	MAT105
		2	2	3	Foundations of Mathematics 1	MAT106
		2	2	3	Linear Algebra 1	MAT107
MAT105		3	2	4	Calculus 2	MAT113
MAT106		2	2	3	Foundations of Mathematics 2	MAT114
MAT107		2	2	3	Linear Algebra 2	MAT115
		2	2	3	Finite mathematics	MAT116
		2	2	3	Mathematical method	MAT117
MAT105		2	2	3	advance Calculus 1	MAT201
MAT105 + MAT113		2	2	3	Ordinary differential equation 1	MAT202
		2	2	3	Group theory 1	MAT203
		2	2	3	Geometry 1	MAT204
MAT104		2	2	3	advance of Computer science 1	MAT205
MAT105		2	2	3	advance Calculus 2	MAT206
MAT202		2	2	3	Ordinary differential equation 2	MAT207
		2	2	3	Group theory 2	MAT208
		2	2	3	Geometry 2	MAT209
		2	2	3	advance of Computer science 2	MAT210
		2	2	3	Principles and methods of statistics	MAT211
		2	2	3	Mathematical analysis 1	MAT301
MAT202		2	2	3	Partial differential equation 1	MAT302

MAT203		2	2	3	Ring theory 1	MAT303
		2	2	3	Probability 1	MAT304
		2	2	3	Numerical analysis 1	MAT305
MAT105		2	2	3	Mathematical analysis 2	MAT306
MAT302		2	2	3	Partial differential equation 2	MAT307
		2	2	3	Ring theory 2	MAT308
		2	2	3	Probability 2	MAT309
		2	2	3	Numerical analysis 2	MAT310
		2	2	3	Discrete Math.	MAT311
		2	2	3	Complex analysis 1	MAT401
		2	2	3	Topology 1	MAT402
MAT304		2	2	3	Mathematical statistics 1	MAT403
		2	2	3	Functional analysis 1	MAT404
		2	2	3	Modules 1	MAT405
		2	2	3	Complex analysis 2	MAT306
		2	2	3	Topology 2	MAT307
		2	2	3	Mathematical statistics 2	MAT308
		2	2	3	Functional analysis 2	MAT309
		2	2	3	Modules 2	MAT310
		2	2	3	Optimization	MAT311
		2	2	3	History of Math.	MAT312
		2	2	3	Analysis of experiments	MAT313
		74	72	110		

Elective Courses

Course Code	Course Title	Credit hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab	
Total		24	23			

Total Credits =
Total In-Touch Hours =

FIRST LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
MAT105	Calculus 1	4	2	3		
MAT106	Foundations of Mathematics 1	3	2	2		
MAT107	Linear Algebra 1	3	2	2		
UOA141	Computer Science 1	2	1	-	2	
PHY105	Physics 1	3	2	2		
MAT113	Calculus 2	4	2	3		
MAT114	Foundations of Mathematics 2	3	2	2		
MAT115	Linear Algebra 2	3	2	2		
UOA142	Computer Science 2	2	1	-	2	
PHY110	Physics 2	3	2	2		
EPS101	Educational Psychology	2	2	2		
EPS120	The foundations of education	2	2	2		
UOA137	Arabic Language	2	2	2		
UOA140	English language	2	2	2		
UOA135	Human Rights	1	1	0		
UOA136	Freedom and democracy	2	2	-		
Total		41	29	18	4	

SECOND LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
MAT201	Advance Calculus 1	3	2	2		
MAT202	Ordinary differential equations 1	3	2	2		
MAT203	Groups theory 1	3	2	2		
MAT204	Geometry 1	3	2	2		
MAT205	Advance Computer Science 1	3	2	2		
MAT206	Advance Calculus 2	3	2	2		
MAT207	Ordinary differential equations 2	3	2	2		
MAT208	Groups theory 2	3	2	2		
MAT209	Geometry 2	3	2	2		
MAT210	Advance Computer Science 2	3	2	2		
EPS 211	Methods of Scientific Research	3	2	2		
EPS 202	Childhood Psychology	3	2	2		
EPS201	Educational administration	3	2	2		
UOA240	English language	2	2			
Total		38	28	20		

THIRD LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
MAT301	Mathematical analysis 1	3	2	2		
MAT302	Partial differential equation 1	3	2	2		
MAT303	Ring theory 1	3	2	2		
MAT304	Probability 1	3	2	2		
MAT305	Numerical analysis 1	3	2	2		
MAT306	Mathematical analysis 2	3	2	2		
MAT307	Partial differential equation 2	3	2	2		
MAT308	Ring theory 2	3	2	2		
MAT309	Probability 2	3	2	2		
MAT310	Numerical analysis 2	3	2	2		
EPS311	Curricula and teaching Methods	3	2	2		
EPS312	Educational Counselling and Psychological Health	3	2	2		
UOA340	English language	3	2	2		
Total		37	26	22		

FOURTH LEVEL

Course code	Course Title	Credit Hours	Weekly hours			Prerequisite
			Lec.	Tut.	Lab.	
MAT401	Complex analysis 1	3	2	2		
MAT402	Topology 1	3	2	2		
MAT403	Mathematical statistics 1	3	2	2		
MAT404	Functional analysis 1	3	2	2		
MAT405	Modules 1	3	2	2		
MAT406	Complex analysis 2	3	2	2		
MAT407	Topology 2	3	2	2		
MAT408	Mathematical statistics 2	3	2	2		
MAT409	Functional analysis 2	3	2	2		
MAT410	Modules 2	3	2	2		
EPS411	Measure and Straighten	3	2	2		
EPS412	Teaching applications	3	2	2		
EPS413	School applications	3	2	2		
EPS414	Graduation project	3	2	2		
UOA440	English language	2	2			
Total		40	28	24		

Curriculum Map of the PEOs with courses according to learning outcomes

Programme Educational Objectives PEOs	1	2	3	4	5	6	7	8	9
FIRST LEVEL									
Course code	**Course title**								
SECOND LEVEL									
Course code	**Course title**								
THIRD LEVEL									
Course code	**Course title**								
FOURTH LEVEL									
Course code	**Course title**								
Elective Courses									
Course code	**Course title**								

UNIVERSITY REQUIREMENT COURSES

OR

College REQUIREMENT COURSES

OR

Department REQUIREMENT COURSES

Course code (for example MECE110) – Course title (for example English Language I) (number of: Credit units-Lecture hours-Tutorial hours-lab hours (for example 3-3-0-0))

- **Course Definition**
- **Course Topics**
- **Course Description**
- **Course Outcomes**
- **Recommended Textbook(s):**
- **Prerequisites:**
- **Lab. Topics**