

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
2021/2022

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)

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

| 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 | | | |

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|--------|-----------------------|----|----|---|--|--|
| EPS413 | School Practicum | 2 | | 4 | | |
| EPS414 | Classroom Observation | 2 | 2 | | | |
| Total | | 22 | 20 | 4 | | |

Department Requirements: credit hours

| 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 |

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|---------------|--|-----------|-----------|------------|--|---------------|
| 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 | | |

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 Straighen | 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 | | | | | | | | | |
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| SECOND LEVEL | | | | | | | | | | |
| Course code | Course title | | | | | | | | | |
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| THIRD LEVEL | | | | | | | | | | |
| Course code | Course title | | | | | | | | | |
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| FOURTH LEVEL | | | | | | | | | | |
| Course code | Course title | | | | | | | | | |
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| Elective Courses | | | | | | | | | | |
| Course code | Course title | | | | | | | | | |
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