**جامعة الزيتونة الأردنية**
**Al-Zaytoonah University of Jordan**
**كلية العلوم وتكنولوجيا المعلومات**
**Faculty of Science and information Technology**

" عراقة وجودة"
"Tradition and Quality"

| QF01/0408-4.0E | **Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Mathematics Department** |
|---|---|

| Study plan No. | 2021/2022 | University Specialization | **Bachelor of Mathematics** |
|---|---|---|---|
| **Course No.** | 0101363 | **Course name** | **History of Mathematics** |
| **Credit Hours** | 3 | **Prerequisite/ Co-requisite** | ……………….. |

| Course type | ☐ MANDATORY UNIVERSITY REQUIREMENT | ☐ UNIVERSITY ELECTIVE REQUIREMENTS | ☐ FACULTY MANDATORY REQUIREMENT | ☐ Support course family requirements | ☐Mandatory requirements | ✓ Elective requirements |
|---|---|---|---|---|---|---|
| **Teaching style** | ☐ Full online learning | | ✓ Blended learning | | ☐Traditional learning | |
| **Teaching model** | ☐ 1 Synchronous: 1 asynchronous | | ✓ 1 face to face : 1 asynchronous | | ☐2 Traditional | |

## Faculty member and study divisions' information (to be filled in each semester by the subject instructor)

| Name | Academic rank | Office No. | Phone No. | E-mail | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

| Division number | Time | Place | Number of students | Teaching style | Approved model |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

## Brief description

Development of the arithmetica, Logistic of natural numbers, Mechanical aids to calculation, Artificial numbers, Geometry, Algebra, Trigonometry, Measures, The calculus history.

## Learning resources

| Course book information (Title, author, date of issue, publisher ... etc) | 1) Smith, D. E. (2010), History of mathematics, USA, Dover publications, INC. |
|---|---|
| Supportive learning resources (Books, databases, periodicals, software, applications, others) | 1. Carl, B. (2010), A history of mathematics, 2nd edition, USA, John Wily and sons. |
| Supporting websites | • https://en.wikipedia.org/wiki/History_of_mathematics |
| The physical environment for teaching | ✓ Class room  ☐ labs  ✓ Virtual educational platform  ☐ Others |
| Necessary equipment and software | |
| Supporting people with special needs | |
| For technical support | |

## Course learning outcomes (S= *Skills, C= Competences K= Knowledge,*)

| No. | Course learning outcomes | The associated program learning output code |
|---|---|---|
| | **Knowledge** | |

### جـامعة الزيتونــة الأردنيـة
**Al-Zaytoonah University of Jordan**
### كلية العلوم وتكنولوجيا المعلومات
**Faculty of Science and information Technology**

" عراقة وجودة"
"Tradition and Quality"

| QF01/0408-4.0E | **Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Mathematics Department** |
|---|---|

| **K1** | List the stages of development of mathematics from ancient times to modern times | **MK 2** |
|---|---|---|
| **K2** | Report the ancient scholars and their achievements | **MK 2** |
| **K3** | Realize the result of contributions from many different cultures | |
| **K4** | Analyze the mathematics of various different civilizations, their conception and use of mathematics, and how the historical conditions of those civilizations affected and were affected by mathematics | |
| **K5** | give examples of significant applications of mathematics to commerce, science, and general life, past and present | |
| | **Skills** | |
| **S1** | Build mathematical ideas by studying the experiences of previous scientists | **MS 4** |
| **S2** | Create interrelations among the various branches of mathematics, especially their role in the solution of significant problems and in extending the horizons of mathematics | |
| **S3** | Make mathematics students to see the great wealth of mathematics that lies before them and encourages them to continue studying the subject | |
| | **Competences** | |
| **C1** | Develop the capacity to understand the contemporary world in the larger framework of tradition and history | **MC 1** |
| **C2** | Develop the individual's ability to communicate and interact with other mathematical courses | |

## Mechanisms for direct evaluation of learning outcomes

| Type of assessment / learning style | Fully electronic learning | Blended learning | Traditional Learning (Theory Learning) | Traditional Learning (Practical Learning) |
|---|---|---|---|---|
| Midterm exam | 30% | **30%** | 40% | 30% |
| Participation / practical applications | 0 | **0** | 10% | 30% |
| Asynchronous interactive activities | 30% | **20%** | 0 | 0 |
| Final exam | 40% | **50%** | 50% | 40% |

## Schedule of simultaneous / face-to-face encounters and their topics

| Week | Subject | learning style | Reference |
|---|---|---|---|
| 1 | Early writers on number theory, Names and arithmetic, Elementary classifications of numbers | Lecture | 1-32 |
| 2 | Fundamental operations, Reading and writing numbers | Lecture | 32-88 |
| 3 | Addition, Subtraction, Multiplication, Division, Roots | Lecture | 88-155 |
| 4 | Finger reckoning, Modern calculating machines | Lecture | 156-207 |
| 5 | Common fraction, Decimal fractions, Negative numbers | Lecture | 208-257 |
| 6 | Complex numbers, Transcendental numbers | Lecture | 261-270 |
| 7 | General progress of elementary geometry, Technical | Lecture | 270-280 |

جـامعـة الـزيتونــة الأردنيــة
**Al–Zaytoonah University of Jordan**
كلية العلوم وتكنولوجيا المعلومات
**Faculty of Science and information Technology**

" عراقة وجودة"
"Tradition and Quality"

| QF01/0408-4.0E | Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Mathematics Department | | |
|---|---|---|---|

| | terms of Euclidean geometry | | |
|---|---|---|---|
| **8** | Axioms and postulates **Midexam** | Lecture | 280-297 |
| **9** | Analytic geometry, Modern geometry | Lecture | 297-338 |
| **10** | General progress of algebra, Symbols of algebra, Fundamental operations | Lecture | 377-416 |
| **11** | The writing of equations, The solution of equations, Determinents | Lecture | 421-477 |
| **12** | Series, Logarithms, Probability | Lecture | 477-531 |
| **13** | General development of trigonometry Trigonometric functions | Lecture | 600-675 |
| **14** | Weight, Length, Areas, Capacity | Lecture | 634-644 |
| **15** | Greek ideas of a calculus, Modern forerunners of the calculus | Lecture | 677-692 |
| **16** | **Final Exam** | | |

## Schedule of asynchronous interactive activities (in the case of e-learning and blended learning)

| Week | Task / activity | Reference | Expected results |
|---|---|---|---|
| 1 | Self-reading | On famous mathematetian | Self-reading and Discussion |
| 2 | Video 1 Solving exercises | E-learning | Discussion in the class |
| 3 | Home work1: On the subjects studied on the first three weeks | (Lecture notes and Ref.1) | Submit a pdf or word sheet |
| 4 | Quiz 1 | On the subjects studied on the first three weeks | Submitting on the E-learning |
| 5 | Assignment 1: On Frenet-Serret frame | Internet sources and the other Supportive learning resources | Presentation |
| 6 | Video 2 | Solving exercises | Discussion in the class |
| 7 | Home work 2 On the subjects studied in the weeks 4,5 and 6 | (Lecture notes and Ref.1) | Submit a pdf or word sheet |
| 8 | Assignment 2: On Bertrand curves | Internet sources and the other Supportive learning resources | Submitted with the mid exam |
| 9 | Self-reading | Greek mathematetian. | Talk |
| 10 | Video3 Solving exercises | E-learning | Discussion in the class |
| 11 | Home work 3: On the subjects studied after the midexam | (Lecture notes and Ref.1) | Submit a pdf or word sheet |
| 12 | Self-reading | Modern mathematetian | Talk |
| 13 | Quiz 2 | On the subjects studied on the subject studied after midexam | Submitting on the E-learning |
| 14 | Presentation of the subject: The second fundamental form. | Internet sources and the reference book | Video |
| 15 | Video 4 Revision of all the course | E-learning | |
| 16 | **Final Exam** | - | |