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| QF01/0413-4.0E | Study Plan for Master program - Study Plan Development and Updating Procedures/ Mathematics Department |
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|---|---------------------------------------|--|---|
| Course Plan for Mathematics (Master Program) No.: (2021/2022) | | | |
| Approved by Deans Council by decision (14/20/2020-2021) dated (12/8/2021) | | | |
| (33) Credit Hours | | Study system / hybrid program | |
| Type of specialty | <input type="checkbox"/> Humanitarian | <input checked="" type="checkbox"/> Scientific / technical | <input type="checkbox"/> Medical Sciences |

| Teaching style | Percentage of study plan hours / number | Model used (synchronous: asynchronous) |
|---|---|--|
| Complete e-learning courses | 18% / number (6) Credit Hours | 1:1 |
| Blended Learning courses (For Humanity) | 45% / number (15) Credit Hours | 1:1 |
| Blended learning courses (for scientific and medical) | 45% / number (15) Credit Hours | 1:1 |
| Traditional learning courses (for humanity) | 37% / number (12) Credit Hours | 3:0 |
| Traditional learning courses (for scientific and medical) | 37% / number (12) Credit Hours | 3:0 |

Important note: (The teaching patterns of the subjects are distributed at all academic levels in the program, and the Thesis hours are taught in a blended learning mode).

Program vision: Building competencies specialized in the field of mathematics, equipped with the knowledge, skills and leadership, creative and pioneering competencies necessary to compete in the global labor market, through the creative application in the use of information technology and modern teaching and learning strategies.

Program mission and objectives:

1. Enriching students with advanced mathematics principles and concepts.
2. Enable students to analyze and apply in the various fields of mathematics.
3. Formation of the student's scientific and intellectual personality, so that he can contribute to the service and development of society.
4. Preparing the distinguished graduate who possesses the skills of thinking and scientific research to pursue studies at the postgraduate level in the field of work after graduating.

Program learning outcomes ((MK= Main Knowledge, MS= Main Skills, MC= Main Competencies)

| Main knowledge | |
|----------------------|---|
| MK1 | Know advanced concepts in pure mathematics. |
| MK2 | Know advanced concepts in applied mathematics. |
| MK3 | Understand concepts, advanced principles, and theories in the fields of probability and statistics. |
| MK4 | Have the technological culture related to the fields of mathematics and its applications. |
| Basic skills | |
| MS1 | Employing pure and applied mathematics in solving scientific problems. |
| MS2 | The ability to research and write scientific reports. |
| MS3 | Consolidating the scientific methodology as a way of thinking and a tool in facing public problems. |
| General competencies | |
| MC1 | Work professionally and ethically within work teams by having communication mechanisms. |
| MC2 | Have logical thinking and scientific research methods. |

1. Master thesis program (33) credit hours:

| Teaching style | | | Course No. | Course name | Credit hour | Indicative | | Notes |
|--|----------------|----------------------|------------|---------------------------------|-------------|------------|------|-------|
| electronic learning | Fully learning | Traditional learning | | | | Semester | year | |
| 1. Mandatory requirements (18) credit hours | | | | | | | | |
| | | * | 0101711 | Real Analysis | 3 | 1 | 1 | |
| | | * | 0101721 | Abstract Algebra (1) | 3 | 1 | 1 | |
| | | * | 0101731 | Topology (1) | 3 | 2 | 1 | |
| | * | | 0101741 | Applied Mathematics (1) | 3 | 2 | 1 | |
| | * | | 0101751 | Mathematical Statistics | 3 | 1 | 2 | |
| * | | | 0101772 | Scientific Research Methodology | 3 | 2 | 2 | |
| | * | | 0101712 | Functional Analysis | 3 | 1 | 1 | |
| | | * | 0101713 | Complex Analysis | 3 | 1 | 1 | |
| | | * | 0101714 | Mathematical Optimization | 3 | 2 | 1 | |
| | * | | 0101722 | Abstract Algebra (2) | 3 | 2 | 1 | |
| * | | | 0101771 | Selected Topics in Mathematics | 3 | 1 | 2 | |
| | * | | 0101732 | Topology (2) | 3 | 1 | 2 | |
| | * | | 0101742 | Applied Mathematics (2) | 3 | 2 | 2 | |
| | | * | 0101752 | Probability Theory | 3 | 2 | 2 | |
| | * | | 0101743 | Advanced Numerical Analysis | 3 | 1 | 1 | |
| 2. Thesis (9) Credit Hours | | | | | | | | |

2. Comprehensive exam program (33) credit hours:

| Teaching style | | | Course No. | Course name | Credit hour | Indicative | | Notes |
|--|----------------|----------------------|------------|---------------------------------|-------------|------------|------|-------|
| electronic learning | Fully learning | Traditional learning | | | | Semester | year | |
| 1. Mandatory requirements (18) credit hours | | | | | | | | |
| | | * | 0101711 | Real Analysis | 3 | 1 | 1 | |
| | | * | 0101721 | Abstract Algebra (1) | 3 | 1 | 1 | |
| | | * | 0101731 | Topology (1) | 3 | 2 | 1 | |
| | * | | 0101741 | Applied Mathematics (1) | 3 | 2 | 1 | |
| | * | | 0101751 | Mathematical Statistics | 3 | 1 | 2 | |
| | * | | 0101711 | Advanced Numerical Analysis | 3 | 1 | 2 | |
| * | | | 0101771 | Selected Topics in Mathematics | 3 | 2 | 2 | |
| * | | | 0101772 | Scientific Research Methodology | 3 | 2 | 2 | |
| | * | | 0101791 | Research Project | 3 | 2 | 2 | |
| 2. Electives requirements (6) credit hours | | | | | | | | |
| | * | | 0101712 | Functional Analysis | 3 | 1 | 1 | |
| | | * | 0101713 | Complex Analysis | 3 | 1 | 1 | |
| | | * | 0101714 | Mathematical Optimization | 3 | 2 | 1 | |
| | | * | 0101722 | Abstract Algebra (2) | 3 | 2 | 1 | |

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| | | * | 0101732 | Topology (2) | 3 | 1 | 2 | |
| | | * | 0101742 | Applied Mathematics (2) | 3 | 2 | 2 | |
| | | * | 0101752 | Probability Theory | 3 | 2 | 2 | |

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| 3. Comprehensive exam (0) Credit Hours |
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