Master of Philosophy (M. Phil.) Program in Mathematics (Part Time)

"Promoting Excellence in Education"

KATHMANDU UNIVERSITY

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Introduction
Mathematics is the mirror of civilization. Being an exact science, mathematics seems to be abstract in nature, however today it penetrates all fields of human endeavor. Latest scientific and technological developments have extended the scope of applications of each branch of mathematics. As mathematics is the backbone of any applied sciences, we at Kathmandu University (KU), strive to run advanced degree programs in mathematics maintaining high standards of teaching and research in major branches of mathematics, with a unified approach, emphasizing both the pure and applied aspects. KU envisages contributing in teaching and research through a healthy & fruitful interaction between the students and teachers.

Realizing the necessity of research-based program in mathematics, KU has prepared an updated course as per the modern trend. The school plans to offer part time M. Phil. Program suitable for fresh graduates and the competent working teachers. The course in this program includes 21 credit hour course works and 9 credit hour dissertation. Also, M. Phil. degree has two branches of specialization: Pure mathematics and applied mathematics.

Objective
The general objective of the program is to create scholars for high profile careers in teaching and research at the local as well as global level. The specific objective is to initiate research in pure as well as in applied mathematics. The course has been designed to meet the following objectives:

- To produce human resource, with depth knowledge and skilled in mathematical tools for teaching, research and also to work in business/financial sectors.
- To focus on both pure as well as applied mathematics courses.
- To pay attention toward the latest development trends in mathematics.
- To contribute in mathematical literature in Nepal and abroad through research and publications.

General Information
The course structure has been designed to be flexible to meet the needs of students. New courses will be added in the future to cover the latest developments in various areas of mathematics. The department will offer the following courses:

Course | Credit
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1. Algebra | 3
2. Measure theory and Functional Analysis | 3
3. Operations Research | 3
4. Calculus of Variations | 3
5. Bioinformatics | 3
7. One Elective Course | 3
8. Dissertation | 9
Total | 30

Elective Courses*

i. Commutative algebra and algebraic geometry
ii. Analysis
iii. Qualitative theory of differential equations and stability theory
iv. Computational mathematics
v. Bio-mathematics
vi. Mathematical modeling
vii. Financial mathematics
viii. Nonlinear analysis
ix. Number theory and cryptography
x. Topology
xi. Differential equations and modeling
xii. Applied functional analysis
xiii. Special function
xiv. Harmonic analysis
*One elective course will be offered as per the availability of experts.

Students must have some basic knowledge of computer. It is mandatory to submit assignments and other academic works typeset in Latex. So, department will arrange one week workshop for Latex and mathematical packages for new admitted students at the beginning of the session.

**Duration of the Course**
The program is aimed for part time students. The duration for the program will be 30 months (5 Semesters) of study.

**Dissertation**
A dissertation of expository type with typeset in Latex is a necessary academic requirement for the successful completion of M. Phil. degree. The candidate must indicate an ability to express oneself in a satisfactory style. Normally, the dissertation should be completed and submitted within one year after the successful completion of the assigned courses. However, upon the recommendation of the supervisor, and subject to the approval of the Research Committee, only a maximum extension up to six months can be granted to a student if he/she desires so.

**Evaluation**
In order to graduate, M. Phil. students are to maintain at least a **3.0** CGPA on the scale of 4.

**Admission Requirement**
The minimum requirement for admission to M. Phil. is a good academic record with at least second division with 50% or a CGPA of 2.5 out of 4 or an equivalent grade in master’s level in mathematics (M.A/M.Sc.). The university reserves the right to accept or deny admission on the basis of overall academic and other records and to limit enrollment by selecting from among qualified candidates.

The expected (minimum) number of students for enrollment in the program is **FIVE**. In case of less number of candidates, the school has the right to decide whether or not to run the program. Program will be run at the School of Science, Kathmandu University, Dhulikhel, Kavre.

**Teaching Methodology**
Teaching is done by means of lectures, problem solving and discussion. Regular seminars (oral presentation), paper work assignments are the common teaching methods used by the concerned course instructor to achieve the objective of the program.

KU professors are always dedicated to academic excellence and committed to academic freedom. The degree is awarded on the basis of the following three components:

1. Continuous in-semester evaluation including assignments, seminars and written tests,
2. Written examination at the end of each semester,
3. Dissertation work.

The school will encourage students to visit (at their own expense) to other research institute, most likely, to India, for literature collection and to interact with research scholars with faculties.

**Fee Structure**
The M. Phil. Program is operated under the full-cost recovery basis. The total fee for the entire program in mathematics course is **NRs. 175,000/-** This does not include the cost of books, stationary, food, lodging and bus fare.

The tuition fee will have to be paid in **FIVE** installments. Monthly fee will be **charged extra** for the period of extension for the candidates who delay their completion of degree due to their own negligence.

**Library and Computer Lab**
To facilitate teaching, learning and research activities, the university has a well-equipped central library for students. Also, the School of Science has a separate computer lab with internet facilities for postgraduate students.

All regulations pertaining to regular students of KU will normally be applicable to M. Phil. Students.

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