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. Semester wise courses structure is as follows:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1. Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2. Use of Computer Software</td>
<td>3</td>
</tr>
<tr>
<td>II</td>
<td>3. Qualitative analysis of</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>differential equation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Operations Research</td>
<td>3</td>
</tr>
<tr>
<td>III</td>
<td>5. Functional Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>6. Mathematical Modeling</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>7. One Elective Course</td>
<td>3</td>
</tr>
<tr>
<td>V</td>
<td>Dissertation</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

**Elective Courses**
- i. Commutative Algebra
- ii. Algebraic Geometry
- iii. Topology
- iv. Differential Geometry
- v. Differential Equations and Its Applications
- vi. Applied functional Analysis
- vii. Special functions
- viii. Harmonic Analysis
- ix. Number Theory
- x. Probability and Stochastic Processes
- xi. Advanced Mathematical Modeling
- xii. Financial Mathematics
- xiii. Bio-Mathematics
- xiv. Qualitative Analysis
- v. Computational Mathematics
- vi. Integral Transform

*One elective course will be offered as per the availability of experts.
**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 153,800/-** 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.

**Teaching Assistantship**
Teaching assistantship can be offered to a few deserving candidates of M. Phil. course to meet the fees charged (partial) by the university. The candidate should teach at least 12-15 hrs per week and perform other duties as specified by the head of the department. The department, as per its need, has sole authority to decide the number of such assistantship and the amount of financial assistance provided.

**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.

**Contact Address**
Dean, School of Science  
Kathmandu University  
Dhulikhel, Kavre  
Phone: 011-661399/661511  
E-mail: kusos_dean@ku.edu.np

OR  
Graduate Program Coordinator  
Department of Natural Sciences  
School of Science  
Kathmandu University  
P. O. Box No. 6250  
Kathmandu, Nepal  
E-mail: db_gurung@ku.edu.np
KATHMANDU UNIVERSITY

Application Form for Registration in
M.Phil./M.S.by Research Program

(Please type or use capital letters and fill in the form in duplicate)

Personal details

Name: surname first name other name(s)

Sex :  □ Male  □ Female  Date of Birth:

        day / month / year

Place / Country of birth:  Town (Village) District Country

Nationality :______________________________________________________________

Name of father :_________________________________________________________

Permanent address :_______________________________________________________

_______________________________________________________________________

Phone No:_______________________________________________________________

Fax No. :_______________________________________________________________

E-mail :_______________________________________________________________

Mailing Address :_______________________________________________________

_______________________________________________________________________

Phone No:_______________________________________________________________

Fax No.:_______________________________________________________________

E-mail :_______________________________________________________________
Educational record (list all schools and colleges/universities attended)

Academic Qualifications

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Division / % marks/Grade</th>
<th>Date of graduation</th>
<th>Institution /University</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Topic of Dissertation Final Project submitted for your degree:

Other qualification if any

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Division/Grade</th>
<th>Date of graduation</th>
<th>Institution /University</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Professional Training

<table>
<thead>
<tr>
<th>Course/Program Attended</th>
<th>Date From-To</th>
<th>Days</th>
<th>Institution and Place</th>
<th>Skill and Knowledge Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Employment Details

(Please give details of your professional work experiences. Start with current employer)

<table>
<thead>
<tr>
<th>Name and address of the Organization</th>
<th>Employed From-To</th>
<th>Position held</th>
<th>Name and title of Instutional Head</th>
<th>Skill and Knowledge Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Publications

<table>
<thead>
<tr>
<th>Title of Publication</th>
<th>National /International Journal Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you taken courses at KU before? □ Yes □ No
If yes, please indicate (a) course(s) (b) Registration no. ..............

Proposed Area of Research

Department .................................................................

Brief description of area of Research in which you are Interested (up to 50 words)
.................................................................

Supervisor(s)
Supply details of suitable qualified person(s), who has agreed to supervise your work

Name : .................................................................
Qualification : .................................................................
Post held : .................................................................
Address : .................................................................
.................................................................

Name : .................................................................
Qualification : .................................................................
Post held : .................................................................
Address : .................................................................
.................................................................

I (We) am (are) willing to act as supervisor(s) if the candidate is accepted for registration in the MPhil/MS by Research/.

.................................................................

Signature of Supervisor(s)

I declare that the information I have given in this application is true and correct. If registered, I promise to abide by the rules and regulations of the University.

.................................................................

Signature of the applicant

Date:
Attach to your application
- Approval letter by concerned Institution (If the candidate is working at present)
- Copies of transcript or mark sheet giving a complete list of the subjects studied and results obtained.
- Records of Experience
- Brief synopsis of the dissertation Final Project you submitted for your degree.
  (100 words)
- Copies of the publications (if any).
- Concept not/proposal of research (if necessary)

---

For Official Use

Application received in the department on


Application reviewed by the department on


Application reviewed by the Research Committee on


HOD's Signature

Decision of the Research Committee of

the School of

Recommended for registration

Not recommended for registration

Date

Dean's signature

Registration for

_registration No.

Effective date of registration

Date

Controller of Examination