One of the majoring areas of Mathematical Sciences is Actuarial Science.

Major in Actuarial Science

Semester	Papers	Credit
Fifth	MSMT 301 Financial Mathematics	3
	MSAS 301 Actuarial Models I: Life contingent I	3
	MSAC 301 Financial Accounting	3
	MSEC 301 : Nepalese Economy	3
	MSNE 301 Nepali literature I	3
	Total	**15**

Semester	Papers	Credit
Sixth	MSAS 351 Actuarial Models II: Life contingent II	3
	MSMN 351 Investments	3
	MSEC 351 : Principles of Economics I (micro)	3
	MSAC 351 Managerial Accounting	3
	MSNE 351 Nepali literature II	3
	Total	**15**

Semester	Papers	Credit
Seventh	MSAS 401 Actuarial Models III Derivative markets	3
	MSMN 401 Introduction to Risk and Insurance	3
	MSEC 401 : Principles of Economics II (macro)	3
	MSEN 401 Tech. Writing Com. English	3
	MSHU 401 Anthropology I	3
	MSPR 401 Project	3
	Total	**18**

Semester	Papers	Credit
Eighth	MSAS 451 Actuarial Modeling : Loss Models	3
	MSMN 451 Intermediate Business Finance	3
	MSST 451 Regression and Time Series Analysis	3
	MSHU 451 Anthropology II	3
	MSIN 451 Internship	3
	Total	**15**

What is Actuarial Science?

Actuarial Science is the discipline that applies mathematical and statistical methods to assess risk in insurance, finance and other industries and professions.

Actuaries are professionals who are qualified in Actuarial Science through intense education and experience. They study basically

- Mathematics
- Statistics
- Computational Science
- Management (including Finance, Accounting)
- Economics

Career Opportunities

If there is one field where career prospects are abundant because the demand exceeds supply, it is Actuarial Science.

The course is globally recognized with mutual exemptions with a lot of other international actuarial institutes.

Traditionally, actuaries were found only in the life-insurance sector. However, with the opening up of the economy they are wanted by general insurance, health insurance, reinsurance companies, pensions and employee benefits, investment consultancies, risk management, banks, stock exchanges, private and government agencies. This is one field where career prospects are abundant because the demand exceeds supply even in the world.

Messages:

Prof. Dr. Sudha Tripathi
Rector
Tribhuvan University

It is remarkable that at TU SMS, the academic programs are designed with the needs of employers in mind, to give the students a solid foundation from which they may take their career in any direction. A new practice is that there will also be some courses covering Technical Writing Communication English, Humanities and Social Sciences, Management, Natural Sciences not related with the area of concentration taken.

Prof. Dr. P.M. Bajracharya
Director
School of Mathematical Sciences, IOST, TU

We take students from a wide variety of educational backgrounds and we work hard to give everyone the opportunity to shine yourself. We encourage bold, independent thinking and offer the highest quality academic experience to stretch and challenge yourself. Put Mathematics into practice through our innovative outreach program. At TU SMS, you will find Mathematics as a fascinating, beautiful and diverse subject to study. It underpins a wide range of disciplines, from the Physical Sciences to Social Science; from Biology to Business and Finance.

Key Dates and Information

1. Application form and entrance exam fee: Rs. 1200
2. Deposit in Nepal Bank Limited, Kirtipur Branch. Current Account "TU School of Mathematical Sciences" Current Account No. 04500 10627 64010 00001
3. Application form distribution: From 2073 Bhadra 15 onwards
4. Application form submission venue: Dean's Office, Institute of Science and Technology, Tribhuvan University, Kirtipur, Kathmandu
5. Last date to submit Application form: 2073 Ashwin 10
6. Last date to submit application form (with double fee): 2073 Ashwin 13
7. Entrance exam date: 2073 Ashwin 14, 13.00 to 15.00.
8. Entrance exam venue: Public Administration Campus, T. U., Balkhu.

For further details, please visit the website: **smstu.edu.np**

Contact: 9841719383, Director; 9841401317, Krishna Hari Acharya, Chief, Planning and Administrative Section, IOST, TU, Kirtipur, Kathmandu

Tribhuvan University

Institute of Science and Technology

School of Mathematical Sciences

Kirtipur, Kathmandu, Nepal

In the modern world, computational simulations are everywhere and the amount of data available for many enterprises is increasing exponentially. The Internet makes these large quantities of data readily available for many enterprises. Many areas of science, engineering, and industry are now concerned with building and evaluating mathematical models, exploring them computationally, and analyzing enormous amounts of observed and computed data. These activities are all inherently mathematical in nature.

Thus, the Modern Computerized World demands the human resource having all three – analytical ability, data processing capability and fast computing efficiency, i.e., the combined knowledge of Mathematics, Statistics, and Computer Science and Information Technology. The practice has shown that such human resourse cannot be produced by the present system of education in Nepal.

Tribhuvan University has quite recently taken up this as a challenge and has decided to run Bachelor and Master Degree Program in Mathematical Sciences that will help produce at least a critical mass of experts with sound knowledge of fundamentals of mathematics, statistical and analytical capability and fluent computational skills.

What is Mathematical Sciences ?

Mathematical Sciences is a group of disciplines involving Mathematics as a core subject. The Mathematical Sciences tends to be invisible, but it is prevalent wherever

- computers are used,
- data are available,
- Physics or Chemistry is applied,
- Geometry is significant,
- Statistics is employed,
- processes or designs are optimized.

Mathematical Sciences is used in almost every type of business; large or small. Studying Mathematical Sciences means you can work in other fields, such as Chemistry, Biology, Earth Sciences, Computing, Economics, Finance, Engineering, Physics, Electronics, Banking and Meteorology, to list just a few disciplines.

Computers boost Mathematical Sciences

No science has a broader reach than the Mathematical Sciences. Especially, the advent of Computational Science and the recent data explosion have led to an enormous increase in the relevance and impact of the Mathematical Sciences.

Base of Mathematical Sciences Work

Mathematical Sciences work involves the integration of Mathematics, Statistics, and Computation in the broadest sense and the interplay of these areas with areas of potential application. All of these activities are crucial to

Economic growth, National competitiveness, and National security.

Career Opportunities

- Data Analyst
- Financial Analyst
- IT or Computing Analyst
- Mathematical Modeler
- Research Scientist
- Secondary School Teacher

Potential Employers

School of Mathematical Sciences thus provides opportunities to all who aspire to become fit and acceptable in

- **Teaching at all levels:** primary, secondary and tertiary
- **Public service:** Central and Local Government
- **Financial institutions:** banks, investment, finance and insurance companies
- **Computing:** government, commerce and industry
- **Research** at universities, academies, private and government laboratories, consulting companies, etc.

Mission statement

School of Mathematical Sciences, Tribhuvan University (TU SMS), is committed to help the learners not only knowing and understanding the modern world but also making them able to combine the development of knowledge and practical skills in solving real-world problems encountered in various disciplines of education.

Vision Statement

School of Mathematical Sciences, Tribhuvan University (TU SMS), is born to provide students with extensive and diverse knowledge in the Mathematical Sciences, i.e. a unique interdisciplinary learning environment for high quality education and research through a blending of the three disciplines: mathematics, statistics and computer science, and thrives to become a Centre of Excellence.

Bachelor in Mathematical Sciences (BMathSc) Program

For the first time, TU School of Mathematical Sciences is going to lunch **Bachelor in Mathematical Sciences (BMathSc) Program**.

The program is full time, of 8 Semesters in 4 years in duration. Bachelor in Mathematical Sciences courses basically comprises of some compulsory foundational courses consisting of fundamentals of Mathematics, Statistics, and Computer Science and Information Technology plus some elective courses from a list of courses which may vary from year to year as a multi-exit model decided by the subject committee. There will also be some courses covering Technical Writing Communication English, Humanities and Social Sciences, Management, Natural Sciences not related with the area of concentration taken.

Total Credit hours: At least 120 cr. Hrs.

Number of Courses: The first FOUR semesters will offer five courses each. The number of courses in the remaining semesters may vary.

Nature of Courses: Theoretical, Practical.

Eligibility: A candidate who has passed HSEB (10+2) from any stream with Mathematics of 100 marks or Business Mathematics or equivalent is eligible to get admission through entrance examination.

Marking: Semester Exam – 60% (End of the semester exam. 60 marks)

Internal Assessment = 40%

(The internal assessment may include writing test, oral test, seminar, practical, project work, field work etc. In each of the semester Exam and Internal Assessment, the student must secure at least 40% in order to complete the course.)

The first two years of the program provide a foundation in a broad range of areas including Mathematics, Statistics and Computer Science.

Foundation

Semester	Papers	Credit
First	MSMT 101 Calculus with Analytic Geometry I	3
	MSST 101 Statistics & Data Analysis I	3
	MSCS 101 Fundamentals of Computer Science	3
	MSEN 101 Communication skill I	3
	MSCS 102 Mathematics Software (MATLAB)	3
	Total	**15**

Semester	Papers	Credit
Second	MSMT 151 Calculus with Analytic Geometry II	3
	MSMT 152 Linear Algebra with Application I	3
	MSST 151 Statistics & Data Analysis II	3
	MSCS151 Introduction to Programming I	3
	MSEN 151 Communication Skill II	3
	Total	**15**

Semester	Papers	Credit
Third	MSMT 201 Linear Algebra with Application II	3
	MSST 201 Theory of Probability	3
	MSCS 201 Introduction to Programming II	3
	MSMT 202 Differential Equations	3
	MSMT 203 Gen. Logic	3
	Total	**15**

Semester	Papers	Credit
Fourth	MSST 252 Mathematical Statistics	3
	MSST 251 Applied Probability Models	3
	MSCS 251 Data Structure and Algorithm	3
	MSMT 252 Mathematical Modeling	3
	MSMT 253 Discrete Math	3
	Total	**15**

The third and fourth years of the program give the students the opportunity to specialize in one of the prescribed areas –

1. Mathematics
2. Statistics
3. Computer Science and Information Technology
4. Mathematics Education
5. Mathematical Biology
6. Mathematical Economics
7. Computational Finance and so on.