



नागालैण्ड विश्वविद्यालय

NAGALAND UNIVERSITY

(संसद द्वारा पारित अधिनियम 1989, क्रमांक 35 के अंतर्गत स्थापित केंद्रीय विश्वविद्यालय)

(A Central University established by an Act of Parliament No.35 of 1989)

मुख्यालय : लुमामी, जिला : जुन्हेबोटो (नागालैण्ड), पिनकोड – 798627

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वेबसाइट / Website : www.nagalanduniversity.ac.in

Dated Lumami, the 11th July, 2022

Applicants to the MSc in Mathematics may take note of the following:

1. There will be an admission test/interview which will be conducted in the last week of July 2022. Candidates are requested to check the University website for the final admission test date. The necessary details will also be informed to the concerned applicants in the contact numbers/email provided.
2. The admission test/interview will be from the following topics of UG Mathematics Course.

Algebra: Functions, relations, binary operations, system of linear equations-consistent and inconsistent.

Groups, subgroups, abelian groups, cosets, Lagrange's theorem, normal subgroups, factor groups, cyclic groups, homomorphism, isomorphism and their properties, fundamental theorem of isomorphism.

Rings - definition and examples, ideals, fields-definition and examples.

Linear Algebra: Matrix, matrix algebra, Vector space, subspace, linear combination of vectors, linear independence, linear span, basis, dimension, geometrical interpretation, linear transformation, range, null space(kernel), Rank-Nullity theorem.

Real Analysis: Principle of mathematical induction, Division Algorithm, Partially ordered set, ordered set.

Rational numbers and their properties, real numbers and their properties, the least upper bound property, Archimedean property, density property, convergent sequence of real numbers and examples, Monotone convergence theorem, Cauchy sequence, limit superior, limit inferior, necessary and sufficient condition of convergence of a sequence, adherent point, limit point, bounded set of real numbers, the limit and continuity of a function, sequential definition of continuous function, examples of continuous and discontinuous function, properties of continuous function, Intermediate Value Theorem, Max-min (Extremum) Value theorem, uniform continuity, differentiation of a function, Mean-Value theorem, Riemann integration, Fundamental theorem of calculus.

Metric spaces, open set, closed set, limit point, adherent point.

Complex Analysis: Complex numbers, algebra of complex numbers, complex plane, argument, modulus, polar form, drawing/plotting regions (or subsets) of the complex plane, comparison of \mathbb{C} and \mathbb{R}^2 , sequences, convergence, boundedness.

3. For any queries, the following maybe contacted: 8787585011/8258975569.

Sd/-

Admission Committee