

KAKCHING KHUNOU COLLEGE
KAKCHING KHUNOU,UMATHEL
KAKCHING DISTRICT,MANIPUR-795103



DEPARTMENT OF MATHEMATICS

Programme Offered:BA/BSc Mathematics

PROGRAMME OUTCOMES (PO) :

At the graduation in science/arts faculty in Mathematics, students should have :

- Acquired the knowledge with facts and figures related to Mathematics, Physics and Chemistry
- Understand the basic concepts, fundamental principles and scientific theories related to various scientific phenomena and their relevance in the day-to-day life
- Understand application mathematics in different fields
- Analyse given data and draw the conclusion
- Been able to think creatively to propose novel ideas in explaining facts and figures providing new solutions to the problems

- Been able to pursue higher studies in Mathematics and Computer Application
- Been able to work in different Scientific Institutions

COURSE OUTCOME(CO) :

Each course, in all the programmes, has been designed and fulfilled the requirements of the academic and industrial needs. By opting these courses, students may be able to qualify the various esteemed competitive examinations.

These programmes offered by Mathematics department are highly employable and enable the students to take positions in various Institutes/Universities/Industries for research and development and serve the society.

LEARNING (COURSE) OBJECTIVE:

MATHEMATICS MM:101 :

- 1.To study geometric mean, arithmetic mean,Cauchy-Schwarz,Holder's and Minkowski's inequalities
- 2.To learn about Theory of equations like Descard's rule of sign,Fundamental theorem of algebra, Symmetric functions of roots, roots of a cubic equation by Cardon's method
- 3.To understand the convergence of series – Cauchy's General principle of convergence, test of series by using Cauchy root test,Rabbe's test,Leibnitz's test of alternating series
- 4.To learn about groups,sub-groups,cyclic group, Lagrange's theorem, Fermat's and Wilson's theorem, isomorphism & homomorphism

5.To learn the rank of matrices, Eigen value,nullity,Cayley Hemilton theorem

6.To study De Moibre's theorem, expansion of trigonometric functions, exponential values for circular functions, Gregory's series, hyperbolic functions, method of infinite product

MATHEMATICS MM:202

1.To study succesive differentiation, Leibnitz's Theorem & its application

2.To learn Rolles Theorem, LaGrange's and Cauchy's Mean Value Theorem, Taylor's and Maclarin's series

3.To understand the concept of Function of two & three variables

4.To learn Partial differentiation, Euler's Theorem on homogenous function of two&three variables, maxima and minima of functions

5.To know about Curvature, radius of curvature for the Cartesian,parametric,implicit and polar equations, Asymptotes

6.To familiarize with the concepts of Integration,reductuon formulae for definite &indefinite integrals, double integrals

7.To learn Equation of first order& first degree, Linear Second Order differential equation.

MATHEMATICS BMath:303

1.To know the concept of Scalar and vector product of three & four vectors,line,surface & volume integrals, Theorem of Gauss,Green,Stokes

2.To understand Pair of straight lines, system of conics, confocal conics and their properties

3.To extend inn knowledge in Equation of cone cylinder, central conicoids,paraboroids

4.Concepts of Poisson,Geometric,rectangular, exponential, normal probability distribution

MATHEMATICS BMath:404

1.To learn about Dynamics of particle,motion on smooth & rough plane curves, motion of varying mass, Kepler's law

2.To understand Equilibrium condition of coplanar forces,Poinsots Cental axis,Null lines, stable & unstable equilibrium

3.To get the concepts of Momental Ellipsoid,D'Alembert's Principle, Motion about a fixed axis,Compund pendulum

MATHEMATICS BMath:505

- 1.To develop the concept of Normal subgroups, Kernel of homomorphism, Conjugate class, Cauchy's theorem, Sylow Theorem
- 2.To study Rings, Integral domain, Quotient ring & Ideals, Eisenstein's Irreducibility criterion, Unique factorisation domain
- 3.To understand the Concept of Vector Space, Linear Independence, Dimensional Vector Space, Rank-Nullity Theorem
- 4.To know the Inner product Spaces, Orthogonal Vectors, Bessel's inequality for Finite Dimensional vector spaces

MATHEMATICS BMath:506

Analysis -1

- 1.To learn Real number system,Bolzano-Weierstrass theorem,Heine-Borel theorem
- 2.To understand Riemann Integration,Darboux's theorem
- 3.To develop the concept of Improper Integrals,Beta and Gamma function,Abel's test and Dirichlet's test,Frullani's Integral
- 4.To know function of Several Variables, Young's and Schwarz's theorem
- 5.To learn Multiple Integrals, Green's theorem in plane,Stoke's theorem

MATHEMATICS BMath:605

- 1.To know the concepts of First order PDE
- 2.To get the concepts of Non-linear PDE of Order one
- 3.To learn PDE of Second Order

4.To familiarize with concepts of Laplace Transformation

5.To know about Calculus of Variation

MATHEMATICS BMath:606

ANALYSIS -2

1.To learn about Metric spaces

2.To develop the concept of Complete metric spaces

3.To familiarize with the concept of Compactness

4.To get the concept of Complex analysis

5.To understand the idea of Conformal Mapping

MATHEMATICS BMath:507(Theory+Practical)

1.To study Finite difference, Interpolation formulae, Least square polynomial approximation

- 2.To know about Quadrature formulae,Trapezoidal Rule,Simpson's rule
- 3.To learn Introduction to C- programming: Algorithm, compiler, simple C-programme,goto statement, comma operator
- 4.To understand and two dimensional arrays, function
- 5.To learn Programmes for practical like finding GCD of two numbers

MATHEMATICS BMath:60705

- 1.To understand Spherical trigonometry
- 2.To familiarize with the concepts of Celestial sphere
- 3.To develop the idea of Refraction,precision and Nutation
- 4.To learn the concepts of Aberration,Parallax
- 5.To get the concept of Planetary motion

