Pure Mathematics

The math majors who concentrate on pure mathematics theme usually plan to be a secondary school teacher or pursue a PhD degree in mathematics or related subjects.

Major in Mathematics (4 years and at least 96 credits)

1. Introductory level courses (48 credits)

      MATH1013 University Mathematics II (6)

      MATH2012 Fundamental Concepts of Mathematics (6)

      MATH2211 Multivariable Calculus (6)

      MATH2101 Linear Algebra I (6)

      MATH2102 Linear Algebra II (6)

      MATH2201 Introduction to Mathematical Analysis (6)

      SCNC1111 Scientific Method and Reasoning (6)

      SCNC1112 Fundamentals of Modern Science (6)

2. Advanced level courses (48 credits)

      MATH3301 Algebra I (6)

      MATH3401 Analysis I (6)

      MATH3403 Functions of a complex variable (6)

Plus at least 24 credits advanced level Mathematics courses (MATH3XXX or MATH4XXX or MATH6XXX level), at least 12 credits of which should be from MATH4XXX or MATH6XXX level.

Pure Mathematics

Recommended courses:

MATH3303 Matrix Theory and its Applications

MATH3304 Introduction to Number Theory

MATH4402 Analysis II

MATH3302 Algebra II

MATH3001 Development of Mathematical Ideas

MATH4404 Functional Analysis

MATH4406 Introduction to Partial Differential Equations

MATH4501 Geometry

MATH4511 Introduction to Differentiable Manifolds

MATH6504 Geometric Topology

MATH6101 Intermediate Complex Analysis

MATH3002 Mathematics Seminar

- This is a seminar style course intended for those students who have very strong interests and good ability in mathematics.

- Study some book chapters and elementary research articles and make presentations in front of the whole class.

- Active participation in all the discussions is expected. The aim of the course is to let students learn how to initiate self/independent study in mathematics.

Directed Studies in Mathematics (6 credits)/ Mathematics Projects (12 credits)

Selected topics in the past years:

- Dirichlet's Divisor Problem

- Modular functions and forms

- The Plateau problem

- Positive rational solutions to some diophantine equations

- Coxeter Groups

- Riemann surfaces and/ or complex manifolds

- Linear geometry in Euclidean 4-space

- Open problems in affine algebraic geometry and commutative/non-commutative algebra

- Geometry of polynomials