



De La Salle University

DOCTOR OF PHILOSOPHY IN MATHEMATICS

The primary objective of the Ph.D. Mathematics program is to provide training for the development of research capabilities in Mathematics a



De La Salle University

DOCTOR OF PHILOSOPHY IN MATHEMATICS

Number Theory (MTH621P)

3 units

A course on the divisibility properties of integers, congruences, diophantine equations, quadratic reciprocity, arithmetic functions and algebraic numbers.

MAJOR COURSES

Abstract Algebra 1 (MTH611P)

3 units

The study of groups, group homomorphisms, Cayley's theorem, Lagrange theorem, permutation groups and Sylow theorems.

Advanced Linear Algebra 1 (MTH613P)

3 units

A course on matrices, vector spaces, linear transformations, eigenvalues, linear functionals, bilinear forms, and quadratic forms.

Advanced Linear Algebra 2 (MTH713P)

3 units

A study of modules, canonical forms, orthogonal and unitary transformations, annihilators, and duality of linear transformations.

Modern Complex Analysis 1 (MTH643P)

3 units

A course on complex numbers and complex plane, Cauchy-Reimann equations, Riemann surface and conformal mappings, infinite series, complex integration, Cauchy integral theory, singularities and residue theory.

Real Analysis 1 (MTH641P)

3 units

A course on calculus on Euclidean spaces, Lebesgue measure and integration, function spaces, and Stone Weierstrass theorem.

Abstract Algebra 2 (MTH711P)

3 units

The second course on abstract algebra which covers rings and ideals, fields, ring homomorphisms, polynomials, fields extension, algebraic and transcendental extensions.

Combinatorial Geometry (MTH665P)

3 units

This course provides an introduction to linear spaces, projective spaces, affine spaces, polar spaces and generalized quadrangles.

General Topology 1 (MTH663P)

3 units

A study of basic topological concepts such as sets, metric spaces, topological spaces, continuous mappings, compactness, connectedness, separability and topological properties.



De La Salle University

DOCTOR OF PHILOSOPHY IN MATHEMATICS



De La Salle University

DOCTOR OF



De La Salle University

DOCTOR OF PHILOSOPHY IN MATHEMATICS

Regression Analysis (MTH691P)

3 units

A study of simple linear regression and correlation, model validation, multiple regression, variable selection, special linear models, non-linear and non-parametric regression.

Sample Surveys (MTH699P)

3 units

A study of simple random sampling, stratified random sampling, systematic random sampling, systematic and cluster sampling, ratio estimates and cost minimization.

Selected Topics (MTH855P)

3 units

A study of selected topics in specialized areas of mathematics to be chosen by the professor.

Stochastic Processes (MTH609P)

3 units

A course on poisson process, Markov chains, continuous time Markov chains, renewal theory, and martingales.

Time Series (MTH697P)

3 units

A course on linear extrapolation, exponential smoothing, filtering, spectral and cross-spectral analysis, ARIMA and ARIMA processes.

RESEARCH COURSE

Directed Research (MTH921P)

0 units

A research course for students who have finished the course work but not have not taken or passed the comprehensive examination.

DISSERTATION

Dissertation 1 to 15 (MTH976P to MTH987P)

12 units

Conduct of an independent research under the supervision of a dissertation mentor. Students who have already passed the comprehensive examinations are qualified to enroll in this course.



De La Salle University

DOCTOR OF PHILOSOPHY IN MATHEMATICS

ENTRY QUALIFICATIONS

General average of 85%, B, 2.0 or higher.

For the MS and Straight PhD program: Bachelor's degree in Mathematics or its equivalent.

For the PhD program: Masteral degree in Mathematics or its equivalent.

Applicants who do not meet the minimum entry qualification for a graduate program may be advised to take preparatory or refresher courses prior to admission to the program.