MATHEMATICS

NAME OF THE DEGREE

: Doctor of Philosophy
: Ph.D.

FACTULTY MEMBERS

Professors

o Yupaporn Kemprasit, Ph.D. (Colorado State)
Algebraic Semigroup Theory, Space Ring Theory, Hyperstructure Theory

o Kritsana Neammanee, Ph.D. (Chula)
Probability Theory (Limit Theorems and Stein's Method)

Associate Professors

o Ajchara Harnchoowong, Ph.D. (Penn. State)
Number Theory

o Jack Asavanant, Ph.D. (Wisconsin, Madison)
Fluid Mechanics, Applied Mathematics

o Patanee Udomkavanich, Ph.D. (Penn. State)
Coding Theory, Syntactic Monoids of Prefix Codes, Algebraic Semigroup Theory

o Wanida Hemakul, Ph.D. (North Carolina)
Graph Theory, Boundary Value Problems for O.D.E.

Assistant Professors

o Amorn Wasanawichit, Ph.D. (Chula)
Algebra

o Anusorn Chonweerayoot, Ph.D. (Naresuan)
Optimal Control of Distributed Parameter System, Applied Functional Analysis

o Imchit Termwuttipong, Ph.D. (Chula)
Analysis, Fixed Point Theory

o Nataphan Kitisin, Ph.D. (UCLA)
Geometric Analysis

o Paisan Nakmahachalasint, Ph.D. (California)
Bio-Informatics, Number Theory

o Phichet Chaoha, Ph.D. (Illinois)
Algebraic Topology, Fixed Point Theory

o Pornchai Satravaha, Ph.D. (Wollongong)
BEM, DRM, Driven Cavity Flow

o Sajee Pianskool, Ph.D. (Wales Swansea)
Algebra, Representation Theory, Hyperstructure Theory

o Wicharn Lewkeeratiyutkul, Ph.D.(Cornell)
Functional Analysis, Analysis on Lie Groups

Instructors

o Chariya Uiyyasathian, Ph.D. (Colorado, Denver)
Combinatorics and Graph Theory

o Khamron Mekchay, Ph.D. (Maryland)
Numerical Analysis, Partial Differential Equations

o Kittipat Wong, Ph.D. (Illinois)
Probability Theory and Stochastic Analysis

o Nattakarn Chaidee, Ph.D. (Chula)
Probability heory (Limit Theorems and Stein's Method)

o Pimpen Vejjajiva, Ph.D. (Chula)
Mathematical Logic, Set Theory

o Songkiat Sumetkijakan, Ph.D. (Maryland)
Wavelet Theory, Analysis on Fractals

o Sureeporn Chaopraknoi, Ph.D. (Chula)
Algebraic Semigroup Theory, Hyperstructure Theory

o Tuangrat Chaichana, Ph.D. (Chula)
Continued Fractions, Function Fields, p-adic Number Theory and Algebraic Independence

o Wacharin Wichiramala, Ph.D. (Illinois)
Bubble Geometry, Classical Geometry

o Yotsanan Meemark, Ph.D. (Penn. State)
Finite fields, Algebraic Function Theory, Graph Theory

ADMISSION

Each applicant must hold a Bachelor's degree or a Master's degree in Mathematics, or related fields.

In addition, the applicant must meet those requirements promulgated each year by the graduate school, or be approved by the Graduate Program Executive Committee of the Department of Mathematics.

Though regular applications are accepted yearly during September to December, prospective students may apply any time of the year. For foreign applicants, please contact our foreign affair office at fa@sc.chula.ac.th or visit http://galaxy.sc.chula.ac.th/inter-national.

DEGREE REQUIREMENTS

For those entering with a Bachelor's degree, the program requires at least 24 credits of course work and 48 credits of dissertation work. Of the 24 course work credits, 12 must be from alternatively required courses and the other 12 from elective courses, 6 of which must be chosen from upper graduate courses.

For those entering with a Master's degree, the program requires at least 12 credits of course work and 48 credits of dissertation work. At least 6 of the 12 course work credits must be from upper graduate courses.

In both programs, a student must take 2301894 Doctoral Dissertation Seminar every semester.

Besides, the dissertation work must be published in an international journal.

COURSE REQUIREMENTS

1) Required Courses   non-credit
2301788   Research Study in Mathematics I
2301789   Research Study in Mathematics II
2301894   Doctoral Dissertation Seminar
              (in English)

2) Alternatively Required Courses   12 credits
(Only those entering with a Bachelor's degree)
Choose 4 courses from the following groups :

Algebra
2301610   Linear and Multilinear Algebra
2301613   Abstract Algebra I
2301614   Abstract Algebra II

Analysis
2301621   Real Analysis I
2301622   Real Analysis II
2301623   Complex Analysis

Topology and Geometry
2301631   Topology
2301632   Algebraic Topology
2301635   Differentiable Manifolds

Applied Mathematics
2301641   Methods of Applied Mathematics I
2301650   Partial Differential Equations I
2301653   Numerical Analysis I
2301671   Foundations of Operations Research I

3) Elective Courses
3.1 For those entering with a Bachelor's degree, 12 credits must be chosen from the following courses with at least 6 credits from 700 level courses.

2301510   Fundamentals of Abstract Mathematics
2301532   Coding Theory
2301560   Computer Tools in Mathematics
2301601   Recursive Function Theory
2301602   Model Theory
2301615   Homological Algebra
2301616   Algebraic Semigroup Theory
2301617   Lie Algebras I
2301618   Combinatorial Theory
2301619   Algebraic Number Theory I
2301620   Mathematical Analysis
2301626   Measure and Integration Theory
2301629   Functional Analysis
2301642   Methods of Applied Mathematics II
2301643   Introduction to Mathematical Fluid
              Dynamics
2301644   Computational Fluid Mechanics
2301647   Introduction to Boundary Element
              Methods
2301648   Special Functions and Integral
              Transforms
2301654   Numerical Analysis II

2301655   Systems and Mathematical Control
              Theory I
2301661   Probability Theory
2301665   Mathematical Statistics
2301670   Graph Theory and Applications
2301672   Foundations of Operations Research II
2301673   Linear and Network Models
2301674   Integer and Nonlinear Programming
2301675   Mathematical Modeling
2301676   Stochastic Models
2301681   Design and Analysis of Algorithms
2301682   High Performance Computing and
              Visualization
2301683   Parallel Computing
2301684   Compilers for Parallel Computing
2301685   Design of Fault-Tolerant Digital Systems
2301686   Fuzzy Logic
2301687   Dynamical Systems and Chaos
2301688   Signal Processing
2301689   Artificial Neural Networks
2301690   Special Topics in Advanced Mathematics
2301691   Special Topics in Algebra
2301692   Special Topics in Analysis
2301693   Special Topics in Geometry
2301694   Special Topics in Applied Mathematics
2301695   Special Topics in Computational Science
2301696   Selected Topics in Computational
              Science I
2301697   Selected Topics in Computational
              Science II
2301711   Algebraic Geometry
2301717   Lie algebras II
2301719   Algebraic Number Theory II
2301721   Advanced analysis I
2301783   Advanced Topics in Algebra
2301784   Advanced Topics in Analysis
2301785   Advanced Topics in Geometry
2301790   Individual Study
2301791   Selected Topics in Mathematics I
2301792   Selected Topics in Mathematics II

In addition, courses not already taken as alternatively required courses may be chosen as elective courses.

3.2 For those entering with a Master's degree, 12 credits must be chosen from the 600-700 level courses only and at least 6 credits from 700 level courses.

QUALIFYING EXAM
A student must pass the qualifying exams within 3 academic years.

ACADEMIC COLLABORATIONS

- o Special lectures occasionally given by experts in many areas
- o Research collaborations from well-known institutions in countries like Australia, Finland, Singapore, and the USA.

FINANCIAL AIDS

- o Graduate teaching and research assistantships
- o Thailand Research Fund (TRF)
- o Office of the Higher Education Commission