

## CURRICULUM - HIGHER MATHEMATICS POSTGRADUATE SPECIALIZATION PROGRAM

### FALL TERM

Course	Credit (ECTS)	Type
HIGHER ALGEBRA	4 (8)	Mandatory
HIGHER ANALYSIS	4 (8)	Mandatory
SINGULARITIES OF DIFFERENTABLE MAPS: LOCAL AND GLOBAL THEORY	2 (4)	Elective
FOUR MANIFOLDS AND KIRBY CALCULUS	2 (4)	Elective
SYMPLECTIC MANIFOLDS, LEFSCHETZ FIBRATION	2 (4)	elective
COMBINATORIAL NUMBER THEORY	2 (4)	Elective
EXPONENTIAL SUMS IN COMBINATORIAL NUMBER THEORY	2 (4)	Elective
CLASSICAL ANALYTIC NUMBER THEORY	2 (4)	Elective
PROBABILISTIC NUMBER THEORY	2 (4)	Elective
MODERN PRIME NUMBER THEORY	2 (4)	Elective
COMPLEX MANIFOLDS	2 (4)	Elective
INTRODUCTION TO CCR ALGEBRAS	2 (4)	Elective

**WINTER TERM**

<b>Course</b>	<b>Credit (ECTS)</b>	<b>Type</b>
ENUMERATION	2 (4)	Elective
EXTREMAL COMBINATORICS	2 (4)	Elective
RANDOM METHODS IN COMBINATORICS	2 (4)	Elective
INTRODUCTION TO THE THEORY OF COMPUTING	2 (4)	Elective
COMPLEXITY THEORY	2 (4)	Elective
BLOCK DESIGNS	2 (4)	Elective
HYPERGRAPHS, SET SYSTEMS, INTERSECTION THEOREMS	2 (4)	Elective
LARGE SPARSE GRAPHS, GRAPH CONVERGENCE AND GROUPS	2 (4)	Elective
SELECTED TOPICS IN GRAPH THEORY	2 (4)	Elective
COMPUTATIONAL GEOMETRY	2 (4)	Elective
COMBINATORIAL OPTIMIZATION	2 (4)	Elective
THEORY OF ALGORITHMS	2 (4)	Elective
QUANTUM COMPUTING	2 (4)	Elective
RANDOM COMPUTATION	2 (4)	Elective
HOMOLOGICAL ALGEBRA	2 (4)	Elective
HIGHER LINEAR ALGEBRA	2 (4)	Elective
REPRESENTATION THEORY	2 (4)	Elective
BASIC ALGEBRAIC GEOMETRY	2 (4)	Elective
UNIVERSAL ALGEBRA AND CATEGORY THEORY	2 (4)	Elective
TOPICS IN GROUP THEORY	2 (4)	Elective
TOPICS IN RING THEORY.	2 (4)	Elective
CHARACTERISTIC CLASSES	2 (4)	Elective
PERMUTATION GROUPS	2 (4)	Elective
LIE GROUPS AND LIE ALGEBRAS	2 (4)	Elective
INTRODUCTION TO COMMUTATIVE ALGEBRA	2 (4)	Elective
TOPICS IN COMMUTATIVE ALGEBRA	2 (4)	Elective
LINEAR ALGEBRAIC GROUPS	2 (4)	Elective
ALGEBRAIC NUMBER THEORY	2 (4)	Elective