



INFO SHEET

November 9, 2010

QUEEN'S UNIVERSITY AT KINGSTON
Department of Mathematics and Statistics
<http://www.mast.queensu.ca>

CALENDAR		
Wednesday, November 10	Curves Seminar Time: 3:30 p.m. – 5:00 p.m. Place: Jeffery 319	Speaker: Tony Geramita, Queen's University Title: Continue discussion of the Hilbert function of point sets in P^2 Abstract Attached
Thursday, November 11	Remembrance Day	Classes cancelled 10:30 a.m. – 11:30 a.m.
Friday, November 12	Number Theory Seminar Time: 11:30 a.m. – 12:20 p.m. Place: Jeffery 422	Speaker: Ernst Kani, Queen's University Title: Deuring's Construction of Isogenies of CM Elliptic Curves Abstract Attached
Friday, November 12	Department Colloquium Time: 2:30 p.m. Place: Jeffery 234	Speaker: Hadi Salmasian, University of Ottawa Title: Supergroups, their unitary representations, and quantization Abstract Attached
Monday, November 15	Algebraic Geometry Seminar Time: 4:30 p.m. – 5:30 p.m. Place: Jeffery 319	Speaker: Tài Huy Hà, Tulane University Title: Asymptotic Linearity of Regularity and S_a^* -invariant of Powers of Ideals Abstract Attached
Monday, November 15	Seminar on Free Probability and Random Matrices Time: 4:30 p.m. – 6:00 p.m. Place: Jeffery 102	Speaker: Emily Redelmeier, Queen's University Title: Genus expansion for Haar-distributed orthogonal matrices Abstract Attached

Items for the Info Sheet should reach Anne (burnsa@mast.queensu.ca) by noon on Monday. The Info Sheet is published every Tuesday.

Wednesday, November 10, 3:30 p.m. Jeffery 319

Curves Seminar

Speaker: Tony Geramita

Title: Hilbert Function of point sets in P^2

Abstract: Tony will continue the discussion of the Hilbert Function of point sets in P^2 . He will state (and partially prove) the characterization of such Hilbert functions. Special features of certain of these functions reflect geometric properties of the point sets. That will also be explained. The generalizations of all of these results to point sets in P^n and will be given in terms of Macaulay's Theorem (stated but not proved).

If time permits we will begin the study of some non-reduced schemes (supported on points) in P^n , and their geometric interpretations. We will state the (unsolved) problem of finding the Hilbert functions of these schemes and give some positive results on this problem by Alexander and Hirschowitz.

Friday, November 12, 11:30 a.m. Jeffery 422

Number Theory Seminar

Speaker: Ernst Kani

Title: Deuring's Construction of Isogenies of CM Elliptic Curves

Abstract: The purpose of this lecture is to review and to extend Deuring's construction of isogenies of CM elliptic curves via ideals of the endomorphism rings.

Friday, November 12, 2:30 p.m. Jeffery 234

Department Colloquium

Speaker: Hadi Salmasian

Title: Supergroups, their unitary representations, and quantization

Abstract: From the early days of quantum mechanics, representation theory has played a prominent role in the development of theoretical physics. The idea of supersymmetry was initially conceived by physicists. Physicists used unitary representations of supergroups in the study of superparticles before mathematicians established the foundations of supergeometry.

In this talk I will explain an extension of the method of orbits for classification of unitary representations of supergroups. The representations of the Heisenberg-Weyl supergroup are obtained as a special case of this result. I will also talk about a joint work with Karl-Hermann Neeb on a classification of unitary representations as generalized highest weight modules.

Monday, November 15, 4:30 p.m. Jeffery 319

Algebraic Geometry Seminar

Speaker: Tài Huy Hà

Title: Asymptotic Linearity of Regularity and a^* -invariant of Powers of Ideals

Abstract: Let $X = \text{Proj } R$ be a projective variety and let I be a homogeneous ideal in R . It is well known that the regularity $\text{reg}(I^n)$ and the a^* -invariant $a^*(I^n)$ are asymptotically linear functions in n , i.e. there exist constants a_1, a_2, b_1 and b_2 such that $\text{reg}(I^n) = a_1 n + b_1$ and $a^*(I^n) = a_2 n + b_2$ for all n sufficiently large. The linear constants are well understood from reduction theory. In this talk, when I is generated in a single degree, I will discuss how the free constants b_1 and b_2 can be related to a collection of "local" data, the regularity and a^* -invariant of fibers of certain projection map from the blowup of X .

Monday, November 15, 4:30 p.m. Jeffery 102

Seminar on Free Probability and Random Matrices

Speaker: Emily Redelmeier

Title: Genus expansion for Haar-distributed orthogonal matrices

Abstract: I will present some results on Haar-distributed orthogonal matrices connected with second-order freeness.