

Pure Mathematics 503.02

Introduction to Algebraic Geometry

(see Course Descriptions under the year applicable: <http://www.ucalgary.ca/pubs/calendar/>)

Syllabus

<u>Topics</u>	<u>Hours</u>
Fundamental notions: sheaves, schemes, traits, varieties, cotangent bundle	6
Geometry of conics in projective 2-space, intersections of conics, Bezout's Theorem for conics, integral models for conics	6
Morphisms: finite type, proper, flat, smooth, etale	6
Arithmetic geometry of cubics in projective 2-space, singularities	6
Elliptic curves over complex, real, p-adic, rational numbers and finite fields	6
Neron models for elliptic curves	6
TOTAL HOURS	36

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PMAT 503.02- Introduction to Algebraic Geometry

Course Outcomes:

General outcomes

Students will be able to recognize and work with varieties, especially quadratic and cubic, over various fields, and also understand how these fit into the wider context of schemes and morphisms of schemes.