

# Algebraic Number Theory, Math 353/573

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The course will meet Tuesday-Thursday 2.30-3.45 PM.

It is an undergraduate course for Math/Physics majors which starts with the notion of an algebraic number.

It is recommended to all graduate students who completed Modern Algebra I, but did not have a course on Algebraic Number Theory before.

Topics will include

1. The ring of algebraic numbers. Factorisation of ideals into products of prime ideals.
2. Discriminant, Different, Ramification.
3. Finiteness of the group of classes of ideals.
4. The Dedekind zeta function and the Regulator formula.
5.  $p$ -adic numbers, adels, idels. Fourier analysis on the group of  $p$ -adic numbers and adels.