Proposal for Special Topic course: Fall 2008 ----Dinesh Thakur

Title: Function Field Arithmetic

Topics: After rapid basic number theory-geometry review without proofs,
we will introduce function field arithmetic: Artin-Weil type, zeta,
Riemann hypothesis for these functions, calculations with curves. Carlitz-Drinfeld-
Hayes type explicit class field theory, zeta,
gamma functions, Drinfeld modules, t-motives.

Text: `Function Field Arithmetic' ---Dinesh Thakur, hard copy as well as
e-book available in library, and some handouts.

Prerequisites: First number theory or algebraic geometry course
(level of curves), taking it same time is ok too.

Note: (1) If there is enough response, I will make it a year long course
At the end or in second semester, plan to
develop t-motives and their applications in detail
and I hope to get at least some students to work on their PhD thesis
topics by the end.

(2) I would like to get Super-TA. If that does not work out (or in any case)
I would use my past PhD Student Javier-Diaz Vargas and his student
(who are visiting UA next year) as extra resources for problem
sessions and help.