Introduction to the Minimal Model Program

--- Yi Hu

Text Book: Classification of Higher Dimensional Algebraic Varieties
           C. Hacon, S. Kovacs

References: Birational Geometry of Algebraic Varieties
            J. Kollar, S. Mori
            Rational Curves on Algebraic Varieties
            J. Kollar

Course Objective: All topics from the text books (Parts I, II and III) will be covered, ranging from preliminary materials, moduli of projective varieties, to sub-varieties of moduli spaces.

Week 1. Preliminaries
Week 2-3. Singularities
Week 4-5. Recent advances in the Minimal Model Program
Week 6 Multiplier Ideal Sheaves
Week 7 Finite Generation of Restricted Algebra
Week 8-9 Log-Terminal Models
Week 10 -13 Moduli of Polarized Varieties

Learning Outcomes: Students need to understand and absorb all the key concepts, master some basic techniques covered in the lectures, and demonstrate their skills in solving some homework problems (some of them may be challenging).

Homework: Homework will be assigned regularly.

Grade: Your course grade will be based on scores on homework and class participation.

A. 100% -- 90%
B. 89% -- 80%
C. 79% -- 70%
D. 69% -- 60%

Prerequisites: Math536A and B or the equivalent.