MATH 431 – Introduction to Algebraic Geometry

Semester:	Spring 2009		
Instructor:	Alex Degtyarev	**E-mail:**	degt@fen.bilkent.edu.tr
Office:	Room SA-130	**Phone:**	x 2135
Assistant:			

Exams & Grading: 2 Midterms (100 pts each)

- **1st Midterm** $\sim 5^{\text{th}}$ week
- **2nd Midterm** $\sim 10^{\text{th}}$ week

Final exam (150 pts)

- **Final Exam** Finals week

Homework ($\sim$ 50 pts)

Course Schedule:	Tuesday	8:40–10:30	Room SAZ-01
	Friday	8:40– 9:30	Room SAZ-19
Office Hours:	Tuesday	10:40–11:30	
	Friday	10:40–11:30	

Textbook: Lecture notes

Supplementary: Phillip A. Griffiths *Introduction to Algebraic Curves.* Trans. Math. Monographs, Volume 76, American Mathematical Society (1989)

Tentative course contents

- Complex projective plane and projective algebraic curves
- Abstract Riemann surfaces; holomorphic functions and differentials
- Complex manifolds and algebraic varieties; maps
- Smooth *vs.* singular points, tangent spaces; singularities of plane curves
- The Normalization theorem (resolution of singularities for curves)
- Divisors, intersection numbers, the Bézout theorem; the Riemann-Hurwitz formula; the genus formula
- The Riemann-Roch theorems; applications to small genera
- Abel's theorem and its applications

The contents is subject to change without notice.