

**Math 543**  
**Geometry and Manifold Theory I:**  
**Symplectic Geometry**  
FALL 2006

**Instructor:** Dr. Jae-Hyoun Lee, Cupples I (207A), 5-4208, email: [jhlee@math.wustl.edu](mailto:jhlee@math.wustl.edu)

**Time and Location:** Cupples I 199 T-Th 2:30 PM-4:00 PM

**Office Hours:** T-Th 1:00PM-2:00PM

**Reference books:** *Lectures on Symplectic Geometry*, Anna Cannas da Silva.

**Further References :**

1. *Lectures on Symplectic Geometry*, Alan Weinstein
2. *Introduction to Symplectic Topology*, McDuff and Salaman.

**Material:** For the two decades, symplectic geometry has grown as one of the major fields. In particular, it shows deep interactions between mathematical physics, differential geometry and topology. In this course, as an introduction to symplectic geometry, we cover *symplectic linear algebra, symplectic manifolds, cotangent bundles, almost complex structure and Kähler manifolds, Hamiltonian mechanics, symplectic reductions, group actions and the moment maps*. If time allows, toric manifolds.

**Assignments:** There is no test but students who register are expected to deliver a short talk. The topics of talks are up to the students but a list of recommended topics is also available.