

## Course outline for Math 221, Fall 2007.

### INSTRUCTOR

Instructor: Thomas Lam

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Office hours: TBA

### LECTURES

Class hours: Monday Wednesday Friday 12-1pm.

Class location: Science Center 310

### EXAMS AND HOMEWORK

Homework: Problem sets, once a week.

Exam: There will be no exam.

Grading: Problem sets (100%).

### TEXTBOOK

Introduction to Commutative Algebra, by Atiyah and Macdonald.

### OTHER REFERENCES

Undergraduate Commutative Algebra, by Miles Reid

Commutative Ring Theory, by Matsumura

Commutative algebra with a View Toward Algebraic Geometry, by Eisenbud

### SYLLABUS

1. Rings, spectrum of rings, and varieties
2. Modules
3. Localization
4. Primary decomposition
5. Integral dependence
6. Noether normalization and Nullstellensatz
7. Noetherian and Artin rings
8. Discrete valuation rings
9. Completions
10. Dimension theory