Commutative Algebra – 18.705

R, Sep 8: *Rings, ideals, quotients, zero-divisors, nilpotents, units*

T, Sep 13: *Prime and maximal ideals, radicals, operations on ideals*
　　　　　　Exercises: 1.4, 1.8, 1.9, 1.12

R, Sep 15: *Extension and contraction, the prime spectrum*
　　　　　　Exercises: 1.16, 1.19, 1.20, 1.27

T, Sep 20: *Modules, operations, finite generation*
　　　　　　Exercises: 2.7, 2.10, 2.12

R, Sep 22: *Tensor product, algebras, extension of scalars*
　　　　　　Exercises: 2.3, 2.12, 2.13

T, Sep 27: *Exact sequences and flatness*
　　　　　　Exercises: 2.5, 2.8, 2.9, 2.27

R, Sep 29: *Rings and modules of fractions*
　　　　　　Exercises: 3.2, 3.5, 3.11

T, Oct 4: *Local properties, support*
　　　　　　Exercises: 3.12, 3.16, 3.17

R, Oct 6: *What this all means for geometry*
　　　　　　Exercises: 3.21, 3.22, 3.23, 3.24

T, Oct 11: *holiday*

R, Oct 13: **IN-CLASS EXAM**

T, Oct 18: *Primary decomposition*
　　　　　　Exercises:

R, Oct 20: *Integral dependence*
                Exercises:

T, Oct 25: *Integral closure and Noether normalization*
                Exercises:

R, Oct 27: *Valuations*
                Exercises:

T, Nov 1: *Chain conditions*
                Exercises:

R, Nov 3: *Noetherian rings 1*
                Exercises:

T, Nov 8: *Noetherian rings 2*
                Exercises:

R, Nov 10: *Artinian rings*
                Exercises:

T, Nov 15:   **IN-CLASS EXAM**

R, Nov 17: *Discrete valuation rings*
                Exercises:

T, Nov 22: *Dedekind domains*
                Exercises:

R, Nov 24: *vacation*

T, Nov 29: *Hilbert functions*
                Exercises:

R, Dec 1: *Dimension theory of local rings*
                Exercises:

T, Dec 6: *Regular local rings*

Exercises:

R, Dec 8: **IN-CLASS EXAM**

T, Dec 13: *Transcendental dimension*
Exercises: