MATH 8254: ALGEBRAIC GEOMETRY II
HOMEWORK 1
UPDATED WITH A HINT ON 1/27
DUE WEDNESDAY, FEBRUARY 1, 11:59 P.M.

INSTRUCTOR: SASHA VORONOV

Review your course notes and read Gathmann's *Chapter* 13 : *Sheaves of Modules* and *Chapter* 14: *Quasi-Coherent Sheaves* through 14.12. Do Exercises 13.6, 13.8, 13.18, 13.20, 13.25, 13.26, 14.12.

Hint. 14.12: Proceed as in Example 13.22 (a) to identify the kernel of the pullback morphism $i^* : \mathcal{O}_{\mathbb{P}^n} \to i_* \mathcal{O}_X$ with $\mathcal{O}_{\mathbb{P}^n}(-d)$.

Submit the homework by the end of the day, 11:59 p.m., Wednesday, February 1. Please submit it electronically to Gradescope at
`https://www.gradescope.com/courses/500650`,
which you can access through Canvas.