

Introduction to Schemes

Hilary term 2024

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§ Organization

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- questions, corrections, feedback
 ↑ are very welcome!
 ↙ possibly not immediate answers
- Classes: Arun Soor & myself
 weeks 3, 5, 7, 1 Tuesdays 17:00-18:30
- Prerequisites:
 - 1) Comm Alg is a prerequisite
(see e.g. Atiyah, Macdonald "Introduction to Comm. Alg.")
 - 2) Category theory and Homological Algebra will be used but not much
 - 3) C3.4 Algebraic Geometry intuition & ideas, not many references

• Lecture notes (outline):

1) A. Ritter Lecture notes HT 2020-22

2) Dhruv Ranganathan AG Part II
Cambridge, MT 2023

3) "Introduction to schemes" G. Ellingsrud
J.C. Ottem \rightarrow
on his webpage

• Some books:

1. Ravi Vakil "The rising sea:
Foundations of algebraic geometry"

2. Qing Liu "Algebraic geometry
and arithmetic curves"

3. D. Eisenbud, J. Hartshorne
"The geometry of schemes"

• Stacks project:

<http://stacks.math.columbia.edu>

• Advice:

- reread notes every week
- check books for details
- discuss with your peers
- come up with examples
- don't get discouraged - it's objectively hard!

don't feel
bad about
yourself
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