

# Reading seminar on Algebraic Curves, Fall 2018

## Meeting time & place:

Fridays 3–4pm, Hurley 258.

## Topics:

- August 31. Riemann–Roch and Hurwitz’s Theorem ([Har77] IV.1–2).  
Speaker: Zhao Gao.
- September 7. Embedding curves in projective space ([Har77] IV.3, IV.5).  
Speaker: Taylor Ball.
- September 14. Abel’s Theorem, moduli of curves ([ACGH85] Chapter I).  
Speaker: Eric Wawerczyk.
- September 21. Introduction to special divisors I ([ACGH85] Chapter III.1, some of III.2).  
Speaker: Alessio Sammartano.
- September 28. Introduction to special divisors II ([ACGH85] some of Chapter III.2, III.3).  
Speaker: Whitney Liske.
- October 5. Syzygies of curves ([Eis05] Chapters 8,9).  
Speaker: Michael Perlman.
- October 26. The varieties of special linear series on a curve ([ACGH85] Chapter IV).  
Speaker: Eric Riedl
- November 2. The basic results of Brill–Noether theory ([ACGH85] Chapter V).  
Speaker: Claudiu Raicu
- November 9. The Riemann Singularity Theorem and the Torelli Theorem ([ACGH85] Chapter VI).  
Speaker: Shih-Kai Chiu.
- November 30. Existence and connectedness theorems for  $W_d^r(C)$  ([ACGH85] Chapter VII).  
Speaker: Michael Perlman.
- December 7. Grothendieck–Riemann–Roch and the secant plane formula ([ACGH85] Chapter VIII).  
Speaker: Eric Riedl.

## References

- [ACGH85] E. Arbarello, M. Cornalba, P. A. Griffiths, and J. Harris, *Geometry of algebraic curves. Vol. I*, Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences], vol. 267, Springer-Verlag, New York, 1985. MR770932
- [Eis05] David Eisenbud, *The geometry of syzygies*, Graduate Texts in Mathematics, vol. 229, Springer-Verlag, New York, 2005. A second course in commutative algebra and algebraic geometry. MR2103875
- [Har77] Robin Hartshorne, *Algebraic geometry*, Springer-Verlag, New York-Heidelberg, 1977. Graduate Texts in Mathematics, No. 52. MR0463157