Analogies between $\mathbf{Z}$ and $F[T]$
References

Continued fractions in $F((1/T))$

W. Adams and M. Razar, "Multiples of points on elliptic curves and continued fractions," *Proc. London Math. Soc.* **41** (1980), 481–498.

L. Baum and M. Sweet, "Continued fractions of algebraic power series in characteristic 2," *Annals of Mathematics* **103** (1976), 593–610.

W. M. Schmidt, "On continued fractions and Diophantine approximations in power series fields," *Acta Arith.* **95** (2000), 139–166.

A. van der Poorten, "Reduction of continued fractions of formal power series," pp. 343–355 of *Continued fractions: from analytic number theory to constructive approximation*, Amer. Math. Soc., Providence, RI, 1999.

A. van der Poorten and X. C. Tran, "Quasi-elliptic integrals and periodic continued fractions," *Monatsh. Math.* **131** (2000), 155–169.

The first paper describes the connection between period lengths of certain continued fractions and the order of points on elliptic curves. This is also briefly discussed in the paper by van der Poorten and Tran, and in the survey by Schmidt. The second paper, by Baum and Sweet, introduces the continued fraction theory in a slightly different way than in the course, and investigates the continued fraction of the root of $X^3 + (1/T)X + 1$ in $\mathbf{F}_2((1/T))$. The fourth and fifth papers discuss reduction mod p of continued fractions over $\mathbf{Q}$ and (non)periodicity of the continued fraction for quadratic irrationals.

Reciprocity in $\mathbf{F}_p[T]$

F. Lemmermeyer, *Reciprocity Laws*, Springer–Verlag, Berlin, 2000.

P. Roquette, Class field theory in characteristic p, its origin and development, pp. 549–631 of "Class field theory – its centenary and prospect," Math. Soc. of Japan, 2001.

M. Rosen, *Number theory in function fields*, Springer–Verlag, New York, 2002.

Lemmermeyer's book lists references to proofs of QR in $\mathbf{F}_p[T]$ (for $p \neq 2$) on page 25. Roquette treats the history of the reciprocity law, including $p = 2$. For more of Roquette's history papers, go to `http://www.rzuser.uni-heidelberg.de/∼ci3/manu.html`.

The Mason–Stothers theorem and the *abc* conjecture

J. Browkin, "The *abc*-conjecture," pp. 75–105 of *Number Theory* (R. P. Bambah, V. C. Dumir, R. J. Hans-Gill eds.), Birkhauser, Basel, 2000.

S. Lang, *Math talks for undergraduates*, Springer–Verlag, New York, 1999.

A. Nitaj, "La conjecture *abc*," *Enseign. Math.* **42** (1996), 3–24.

The *abc* conjecture has a home page: `http://www.math.unicaen.fr/∼nitaj/abc.html`.

Carlitz polynomials (on Homework 5)

L. Carlitz, "A class of polynomials," *Transactions of the American Mathematical Society* **43** (1938), 167–182.

Rosen's book (see above), Chapter 12.

Carlitz works in $\mathbf{F}_q[x][u]$ instead of $\mathbf{F}_p[T][X]$ with x in place of $-T$, and he writes $\omega_M(u)$ for our $[M](X)$. His basic starting point is $\omega_x(u) = u^q - xu$ instead of $u^p + xu$. On a first reading, skip Section 1 of his paper. Rosen writes $[M](X)$ as $C_M(X)$.