



Dr. Richard Crew  
Department of Mathematics, 404 Little Hall  
University of Florida  
Office Hours: TBA

Contact information: due to renovations in Little Hall I do not have a phone at the moment. The best way to reach me is by email, [rcrew@ufl.edu](mailto:rcrew@ufl.edu).

Course meeting time and place: MWF7 in MAT 113.

This course is the first semester of a year-long sequence in Local Class Field Theory. Topics to be covered:

- Basic theory of nonarchimedean fields
- Ramification theory: the ramification filtration and Herbrand's theorem
- Central simple algebras over local fields
- Group cohomology
- F-isocrystals and the slope decomposition
- The fundamental class and the reciprocity isomorphism
- Weil groups of local fields
- Lubin-Tate groups and the existence theorem.
- Explicit reciprocity laws

If time permits we will cover some more advanced topics, such as perfectoid fields and Fontaine's theory of p-adic Galois representations.

There is no fixed text for this course. The lectures will be based on a set of [notes](#) currently in preparation. Much of the material will come from the following references, which are highly recommended:

- Serre, *Local Fields*, Springer.
- Cassels and Frohlich (eds.), *Algebraic Number Theory*, London Math. Soc.

MAS 6331-2 and a sense of adventure.

The final course grade will be based on homework sets and class participation.

Except for exam dates, attendance is not mandatory but highly recommended. Bring your textbook to class! If you miss a class, it is your responsibility to find out what happened and if any modification was made in the assignments or exam dates.

No makeups will be given for quizzes. Makeups for exams must be arranged in advance, except in the case of a documented medical emergency. Acceptable reasons for missing a quiz or exam are serious family emergencies, special curricular requirements of other units of the University, military obligations, religious holidays, severe weather conditions, or court-imposed legal obligations. This attendance policy is consistent with the university regulations on attendance.

Students requesting accommodations for disabilities should register with the Disability Resource Center. Once registered, the student will be given a letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Students are expected to provide feedback on the quality of instruction by completing online evaluations. Typically this process takes place during the last weeks of semester. The results of the evaluations are available when they are tabulated.

This web page is the authoritative source for the course syllabus and supersedes all previous versions.

