The Master's degree in Mathematics

Mathematical Knowledge

Students will know the standard theorems and techniques of

- K - 1. undergraduate mathematics,
- K - 2. advanced analysis, including properties of metric spaces, Riemann integration and functions of several variables,
- K - 3. abstract algebra, including homomorphism theorems, Galois theory, and vector spaces, and
- K - 4. a specialized area of mathematics at an advanced level (as defined by the student and the student's committee).

Mathematical Reasoning

Students will be able to

- R - 1. define and explain mathematical concepts
- R - 2. compose and explain mathematical proofs and counterexamples; make logical inferences
- R - 3. propose conjectures, generalizations, and mathematical questions
- R - 4. solve non-routine mathematical problems
- R - 5. read, discuss, and write mathematics

For this degree, outcomes will be assessed at the **advanced** level, characterized by an ability to explain and reproduce mathematical concepts and arguments introduced in classes and readings, but with a possible expectation of further development by the student, and the ability to apply these ideas to new situations that may be dissimilar to previously encountered applications.