



PREREQUISITE WORKSHEET FOR  
**MASTERS IN (PURE) MATHEMATICS**

The courses listed below, or their equivalents, are required prerequisites for the Pure Math Graduate Program. Fill out the form below and email it to graduate advisor listed on [Pure Math Graduate Program](#).

Under each course, fill out the course number, the semester or quarter and year (for example, Fall '20), institution at which you completed the course, and your grade in the course.

Your Name: \_\_\_\_\_ E-Mail: \_\_\_\_\_

**MATH 247. Introduction to Linear Algebra**

Matrix algebra, solution of systems of equations, determinants, vector spaces including function spaces, inner product spaces, linear transformations, eigenvalues, eigenvectors, quadratic forms and applications. Emphasis on computational methods.

Institution: \_\_\_\_\_ Semester or Quarter/Year: \_\_\_\_\_

Course Number: \_\_\_\_\_ Grade: \_\_\_\_\_

**MATH 361A. Introduction to Mathematical Analysis I**

Rigorous study of calculus and its foundations. Structure of the real number system. Sequences and series of numbers. Limits, continuity, and differentiability of functions of one real variable. Students will be asked to write valid mathematical proofs. Note: This is a junior level analysis course, not Calculus I.

Institution: \_\_\_\_\_ Semester or Quarter/Year: \_\_\_\_\_

Course Number: \_\_\_\_\_ Grade: \_\_\_\_\_

**MATH 361B. Introduction to Mathematical Analysis II**

Riemann integration. Topological properties of the real number line. Sequences of functions. Metric Spaces. Introduction to the calculus of several variables. Students will be asked to write valid mathematical proofs.

Institution: \_\_\_\_\_ Semester or Quarter/Year: \_\_\_\_\_

Course Number: \_\_\_\_\_ Grade: \_\_\_\_\_

**MATH 364A. Ordinary Differential Equations I**

First order differential equations; undetermined coefficients and variation of parameters for second and higher order differential equations; series solution of second order linear differential equations; systems of linear differential equations; applications to science and engineering.

Institution: \_\_\_\_\_ Semester or Quarter/Year: \_\_\_\_\_

Course Number: \_\_\_\_\_ Grade: \_\_\_\_\_

**MATH 444. Introduction to Abstract Algebra**

Groups, subgroups, cyclic groups, symmetric groups, Lagrange's Theorem, quotient groups. Homomorphisms and isomorphisms of groups. Rings, integral domains, ideals, quotient rings, homomorphisms of rings. Further topics in groups, rings and fields as time permits. Students will be asked to write valid mathematical proofs.

Institution: \_\_\_\_\_ Semester or Quarter/Year: \_\_\_\_\_

Course Number: \_\_\_\_\_ Grade: \_\_\_\_\_