Master of Arts Program in Mathematics

West Chester University of Pennsylvania

The MA in Mathematics Program is a thirty-three credit Master's Program designed to offer candidates flexibility through elective courses. The core curriculum is six mathematics courses consisting of abstract algebra, real analysis, mathematical statistics, and geometry. Students in this program have fifteen credits of electives. The student's capstone experience is either a thesis or an oral comprehensive exam. Through selection of elective courses students may diversify into several areas, including education, statistics, applied mathematics, and/or computer science. The program is well suited for high school mathematics teachers or other educators who are interested in advancement in the high school and/or college teaching. Students may elect up to four mathematics education courses. The GRE may be waived depending on the student's background and undergraduate GPA. Graduate tuition plus fees for PA residents is approximately $1,848 and for non-residents is approximately $2,658 for 3 credits.

Students may also elect to take up to 9 credits of graduate courses prior to matriculation. Our graduate course offerings for the next upcoming sessions are as follows:

Summer I - May 28th to June 28th 2019

- **MAT 521 Discrete Mathematics -** Topics include the study of logic, sets, relations, counting, Eulerian and Hamiltonian Graphs, Digraphs, Trees, Algorithms, Paths, Planarity, and Chromatic Numbers. MW 6 p.m. to 10 p.m.
- **MAT 595 Topics in Mathematics (Homotopy Theory) -** This course will introduce students to methods of computation in algebraic topology. Topics covered: singular homology, singular cohomology, and homotopy groups. TR 6 p.m.to 10 p.m.
- **MAT 503 History of Mathematics -** Many great mathematicians will be studied including Hippocrates, Euclid, Archimedes, Heron, Cardano, Newton, the Bernoulli Brothers, Euler, Gauss, and others. MTWR 3:30 p.m. to 5:30 p.m.

Summer II – July 1st to August 2nd 2019

- **MAT 595 Topics in Mathematics (Galois Theory) –** Topics include complex numbers, solutions of cubic and bi-quadratic equations, field extensions, Galois Group of a polynomial, Galois Correspondence, and the Fundamental Theorem of Galois Theory. MTWR 3:30 to 5:30 p.m.
- **MAT 575 Complex Numbers** – Topics include: complex numbers and the complex plane, complex functions and mappings, analytic functions, elementary functions, and integration in the complex plane. MW 6 p.m. to 10 p.m.

The Week of July 15th to July 19th 2019

- **Workshop 1**. Effectively Using TI Technology in the Mathematics Classroom
  MTE 568 – SEMINAR FOR SECONDARY SCHOOL TEACHERS. (M-R 8 a.m. to 4:30 p.m. Friday till 1 p.m.)
- **Workshop 2**. Integrating Coding using TI-Basic into your Mathematics and Science Lessons
  MTE 595-01 – TOPICS IN MATHEMATICS EDUCATION (PROGRAMMING). (M-R 8 a.m. to 4:30 p.m. Friday till 1 p.m.)

The Week of July 22nd to July 26th 2019

- **Workshop 3.** Mathematically Model Real-World Data with Social Implications
  MTE 595-02 – TOPICS IN MATHEMATICS EDUCATION (MODELING). (M-R 8 a.m. to 4:30 p.m. Friday till 1 p.m.)
- **Workshop 4.** Integrate ACT and SAT Preparation into Your Math Lessons with TI-84 CEs or TI-Nspires
  MTE 502 – FUNDAMENTAL CONCEPTS IN MATHEMATICS II. (M-R 8 a.m. to 4:30 p.m. Friday till 1 p.m.)

Fall 2019 – August 26th to December 13th 2019

- **MAT 515 – Abstract Algebra I -** This course investigates elements of the theory of groups and rings. M 4:25 p.m. to 7:10 p.m.
- **MAT 532 – Geometry I –** This course is a rigorous introduction to geometry from a transformational point of view, emphasizing Euclidean, hyperbolic, and/or projective geometry. W 4:25 p.m. to 7:10 p.m.
- **MAT 548 – Industrial Mathematics (Continuous Models) –** A survey of mathematical concepts, techniques, and numerical algorithms used to study real-world continuous mathematical models. M 4:25 p.m. to 7:10 p.m.
- **MAT 552 – Operations Research -** This course provides an overview of deterministic operations research methodology including linear, integer, nonlinear, and dynamic programming, and classical optimization problems. R 4:25 p.m. to 7:10 p.m.
- **MTE 512 – Sr. High School Mathematics** - This course will focus on the curricula, methods of instruction, and assessment techniques used to teach mathematics in a senior high school setting. T 4:25 p.m. to 7:10 p.m.
- **STA 505 – Mathematical Statistics I –** A rigorous treatment of probability spaces and an introduction to the estimation of parameters. R 4:25 p.m. to 7:10 p.m. or R 7:15 p.m.to 10 p.m.
- **STA 511 – Statistical Computing -** Course will give students the ability to effectively manage and manipulate data, conduct statistical analysis and generate reports and graphics, primarily using the SAS Statistical Software package. W 12:00 p.m. to 2:45 p.m. or W 4:15 p.m. to 7:00 p.m. or W 7:15 p.m. to 10 p.m.