MATHEMATICS DEPARTMENT
COLLEGE OF ARTS & SCIENCES
SILLIMAN UNIVERSITY

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Faculty:

1. Dr. Jenette S. Bantug	**- Ph.D. in Mathematics**
2. Assoc. Prof. Alice A. Mamhot	**– M.S. in Mathematics**
3. Asst. Prof. Emelyn C. Banagua	**- M.S. in Mathematics**
4. Asst. Prof. Shariff Ivan G. Datar	**– M.S. in Mathematics**
5. Asst. Prof. Kemmons S. Kilat	**– MAT Mathematics**
6. Asst. Prof. Gilda E. Scribner	**- MAT Mathematics**
7. Rhea Rheem M. Bolodo	**– M.S. in Mathematics**
8. Lourdes D. Eullaran	**– M.S. in Mathematics**

Program: **The Master of Arts in Teaching Mathematics Program (Revised 2018-2019)**

The M.A.T. (Mathematics) program is intended primarily for teachers or would-be teachers of elementary, junior, and senior high school mathematics whose undergraduate preparation is a BS in Education or BS in Elementary Education (major in Mathematics). It is for teachers seeking to upgrade their teaching proficiency in mathematics through a more extensive exposure to a variety of "mathematics content" and teaching methods.

Objectives:

The main objective of the MAT (Mathematics) program is to meet the needs of mathematics teaches of elementary, junior, and senior high school mathematics for public and private schools, specifically by:

- Providing a more thorough background on the theory and content of mathematics to give a firm and broader base of the field;

- Upgrading teaching competence in the light of modern approaches to learning and teaching mathematics and undertaking research;

- Exposing them to opportunities relevant to mathematics needed by elementary, junior, and senior high school mathematics l teachers and eventually fostering continuous self-education.

Proposed Curriculum (Effective 2018-2019)

A. Basic Courses: (9 units)
- Ed 120 – Principle of Research
- Math 102 – Mathematical Analysis I
- Ed 127 – Psychological,Sociological Foundation of Education

B. Major Field of Concentration: 15 units
- Math 122 – Mathematical Statistics
- Math 105 – Mathematical Analysis II
- Math 104 – Plane Geometry
- Math 131 – Abstract Algebra I
- Math 120 – Number Theory

C. Cognates
- Ed 129 - Teacher Supervision and Evaluation Methods
- Ed 122 - Philosophy of Education with New Constitution
- Ed 180 - Introduction and Principles of Guidance
- Math 126 – Independent Study
- Math 142 – Graph Theory

D. Thesis
- Math 250 - Thesis Writing

Course Descriptions

Math 102 Mathematical Analysis I (3 units)

Limits, continuity, derivatives of algebraic and transcendental functions (exponential, logarithmic, trigonometric, hyperbolic and their inverses), applications of derivatives, differentials, antiderivatives, definite integrals, fundamental theorem of calculus, and applications of definite integrals.

Math 104 – Concepts n Geometry (3 units)

Lines, Planes, Angles, Triangles, Congruence, Geometric Inequalities, Perpendicularity, parallelism, Areas and Volumes, Cricles and Spheres.

Math 105 – Mathematical Analysis II

Techniques of integration, parametric equations and polar coordinates, cylindrical surfaces, surfaces of revolution, and quadric surfaces; vectors and vector-valued functions; functions of several variables; limits and continuity of functions of several variables; partial derivatives and the total differential; directional derivative; relative and absolute extrema of functions of several variables.

Math 120 Number Theory (3 units)

Divisibility, Diophantine, Equations, Prime Numbers, Congruences, Multiplicative functions, Solutions to equations involving congruences, sums of squares, primitive roots, Quadratic reciprocity.

Math 122 Statistical Theory (3 units)

Distribution of Random Variables, Conditional Probability and Stochastic Dependence, Special Distributions, Distributions of Functions of Random Variables, Limiting Distributions,
Estimations and Statistical Hypotheses, Nonparametric Methods, Sufficient statistics, Normal Distribution Theory.

Math 126 Independent Study (3 units)

Topics in this course depend mainly on student's line of interest. Out of various researchers that the student had read analyzed and synthesized, the student chooses a topic and pursues it in preparation for his master's thesis.

Math 131 Modern (Abstract) Algebra 1 (3 units)

Groups, Subgroups, Cyclic groups, Cosets, Homomorphisms, isomorphism, Cayley's Theorem, Factor Groups, Sylow Theorems, Rings, Fields Integral Domains, Rings of Polynomials, Polynomials over a field, Factor rings, ldeals.

Math 142 Graph Theory (3 units)

Basic concepts, Cyclomatic number, Trees and Arborescences, Paths, centres and diameters, Flow problems, Degrees and Demi-degrees, Matching, Stability number, Kernels and Grundy functions, Chromatic number, Perfect graphs.