

## Michigan Technological University

### Minor in Mathematical Sciences

Program Code SMAM, Academic Year 2023-24

Department of Mathematical Sciences

Total Credits Required: 18

#### Choose one course in Calculus I

- MA 1121 Calculus with Precalculus II (4) *Prereq: MA1120*
- MA 1135 Calculus for Life Sciences (4) *Prereqs: MA1032 or MA1031 or MA1120*
- MA 1160 Calculus with Technology I (4) *Prereqs: MA1032 or MA1031 or MA1120*
- MA 1161 Calculus Plus w/Technology (5) *Prereqs: MA1032 or MA1031 or MA1120*

#### Choose one course in Calculus II, Linear Algebra, or Statistics

- MA 2160 Calculus with Technology II (4) *Prereqs: MA1121 or MA1135 or MA1160 or MA1161*
- MA 2320/MA 2321 Elementary Linear Algebra (2) *Prereqs: MA1121 or MA1135 or MA1160 or MA1161*
- MA 2330 Honors Elementary Linear Algebra (3) *Prereqs: MA1121 or MA1135 or MA1160 or MA1161*
- MA 2710 Introduction to Statistical Analysis (3) *Prereqs: MA1121 or MA1135 or MA1160 or MA1161*
- MA 2720 Statistical Methods (4) *Prereqs: MA1020 or MA1030 or MA1031 or MA1032 or MA1120*

#### Choose at least one of the following courses

- MA 3160 Multivariable Calculus with Technology (4) *Prereqs: MA2160*
- MA 3202 Introduction to Coding Theory (3) *Prereqs: MA2320 or MA2321 or MA2330*
- MA 3203 Introduction to Cryptography (3) *Prereqs: MA2320 or MA2321 or MA2330*
- MA 3520 Elementary Differential Equations (2) *Prereqs: MA2160 or MA2320 or MA2321 or MA2330*
- MA 3521 Elementary Differential Equations (2) *Prereqs: MA2160*
- MA 3530 Intro to Differential Equations (3) *Prereqs: MA2160 or MA2320 or MA2321 or MA2330*
- MA 3560 Math Modeling with Differential Equations (3) *Prereqs: MA2160 or MA2320 or MA2321 or MA2330*
- MA 3710 Engineering Statistics (3) *Prereqs: MA2160 or MA3160*
- MA 3715 Biostatistics (3) *Prereqs: MA1121 or MA1135 or MA2160 or MA1161 or MA3160*
- MA 3720 Probability (3) *Prereqs: MA1121 or MA1160 or MA1161*
- MA 3740 Stat Programming and Analysis (3) *Prereqs: MA2710 or MA2720 or MA3710 or MA3715*
- MA 3810 Intro to Actuarial Mathematics (3) *Prereqs: MA3160*

#### Choose at least one course that emphasizes mathematical logic and reasoning

- MA 3202 Introduction to Coding Theory (3) *Prereqs: MA2320 or MA2321 or MA2330*
- MA 3210 Introduction to Combinatorics (3) *Prereqs: MA2320 or MA2321 or MA2330*
- MA 3310 Introduction to Abstract Algebra (3) *Prereqs: MA2320 or MA2321 or MA2330*
- MA 3450 Introduction to Real Analysis (3) *Prereqs: MA2160*
- MA 3924 College Geometry with Tech (3) *Prereqs: MA2160 or MA2330*
- MA 4908 Theory of Numbers (3) *Prereqs: MA3210 or MA3310 or MA3924*
- MA 4330 Linear Algebra (3) *Prereqs: (MA2320 or MA2321 or MA2330) and MA3160*
- MA 4760 Mathematical Statistics I (3) *Prereqs: MA3720 or EE3180*

#### Elective Course: Choose a second course that emphasizes mathematical logic and reasoning from the previous list or any 3 credit, 4000-level MA course

- MA 4XXX (3) *except MA4945*