Sample Course of Study for the
Bachelor of Science in Mathematics
(Starting with the Fall 2019 Cohort)

Freshman Year

Fall Semester: 16 Credits

- MA-UY 1024 Calculus I for Engineers *4 Credits* OR MA-UY 1324 Integrated Calculus I for Engineers *4 Credits*
- CM-UY 1004 General Chemistry for Engineers *4 Credits*
- EXPOS-UA 1 Writing the Essay *4 Credits*
- CS-UY 1114 Introduction to Programming and Problem Solving *4 Credits*

Spring Semester: 15 Credits

- MA-UY 1124 Calculus II for Engineers *4 Credits* OR MA-UY 1424 Integrated Calculus II for Engineers *4 Credits*
- MA-UY 3034 Applied Linear Algebra OR MA-UY 3044 Linear Algebra OR MA-UY 3054 Honors Linear Algebra *4 Credits*
- PH-UY 1013 Mechanics *3 Credits*
- EXPOS-UA 2 The Advanced College Essay *4 Credits*

Sophomore Year

Fall Semester: 16 Credits

- MA-UY 2114 Calculus III: Multi-Dimensional Calculus *4 Credits*
- PH-UY 2023 Electricity, Magnetism and Fluids *3 Credits*
- PH-UY 2121 General Physics Laboratory I *1 Credits*
- Humanities and Social Sciences Elective #1 *4 Credits*
- Engineering Course #1 *4 credits*

Spring Semester: 16 Credits

- MA-UY 4204 Ordinary Differential Equations OR MA-UY 4214 Applied Ordinary Differential Equations *4 Credits*
- Math Elective #1 *4 Credits*
- PH-UY 2033 Waves, Optics and Thermodynamics *3 Credits*
- PH-UY 2131 General Physics Laboratory II *1 Credits*
- Humanities and Social Sciences Elective #2 *4 Credits*

Junior Year

Fall Semester: 16 Credits

- MA-UY 3014 Probability *4 Credits*
- MA-UY 4414 Applied Partial Differential Equations *4 Credits*
- Humanities and Social Sciences Elective #3 *4 Credits*
- Engineering Course #2 *4 credits*

Spring Semester: 16 Credits

- MA-UY 4434 Applied Complex Variables *4 Credits*
- MA-UY 4114 Applied Statistics *4 Credits*
- Humanities and Social Sciences Elective #4 *4 Credits*
- Engineering Course #3 *4 credits*

Senior Year

Fall Semester: 15 Credits

- MA-UY 4614 Applied Analysis OR MA-UY 4644 Honors Analysis I *4 Credits*
- MA-UY 4444 Mathematical Modeling *4 Credits*
- Free Elective #1 *4 Credits*
- Engineering Course #4 *3 credits*

Spring Semester: 16 Credits

- MA-UY 4424 Numerical Analysis *4 Credits*
- Math Elective #2 *4 Credits*
- Free Elective #2 *4 Credits*
- Free Elective #3 *4 Credits*

Total credits required for the degree: 126 Credits