

MATHEMATICS-APPLIED EMPHASIS (STARTING IN MTH 110)

BACHELOR OF ARTS OR BACHELOR OF SCIENCE DEGREE

THIS IS A **GENERAL** CURRICULUM GUIDE AND IS NOT APPLICABLE TO EVERY STUDENT. IT IS IMPORTANT TO MEET WITH YOUR ADVISOR.

Year One			
¹ MTH 110 Algebra Prerequisite: MTH 097 or proficiency through math placement Gen Ed or ³ WRT 098 (self-placement) Gen Ed Gen Ed ³ Elective	4 3/4 3 3 1	MTH 124 Precalculus: Functions and Models Prerequisite: MTH 110 or proficiency through math placement SEE NOTE BELOW REGARDING OPTIONS FOR THIS COURSE ² WRT 150 Strategies in Writing Gen Ed ⁵ Elective	5 4 3 3
<i>Total</i>	<i>14/15</i>	<i>Total</i>	<i>15</i>
Spring/Summer			
¹ MTH 201 Calculus I Prerequisites: MTH 122 and MTH 123, or MTH 124, or proficiency through math placement			4
		<i>Total</i>	
Year Two			
MTH 202 Calculus II Prerequisite: MTH 201 ⁵ MTH 204 Linear Algebra I (formerly MTH 227) Prerequisites: MTH 122 and MTH 123, or MTH 124, or proficiency through math placement Gen Ed Gen Ed Gen Ed	4 3 3 3 3	MTH 203 Calculus III Prerequisite: MTH 202 ⁴ MTH 210 SWS Communicating in Mathematics Prerequisites: WRT 150 and MTH 201 CIS 161 Computational Science (recommended) OR CIS 162 Computer Science I OR CIS 261 Structured Programming in C Gen Ed ³ Elective	4 3 3-4 3 1
<i>Total</i>	<i>16*</i>	<i>Total</i>	<i>14-15</i>
Year Three			
⁵ MTH 304 Analysis of Differential Equations Prerequisites: MTH 203 and 204 MTH 205 Linear Algebra II (formerly MTH 327) Prerequisites: MTH 204 or 302) STA 312 Probability and Statistics Prerequisites: MTH 201 ³ Elective Gen Ed	4 3 3 3 3	MTH 305 Mathematical Modeling Prerequisites: MTH 302 or 304; and CIS 161 or CIS 162 MTH 360 Operations Research Prerequisites: MTH 204 or 302 and STA 312 (STA 312 may be taken concurrently) Gen Ed Gen Ed ³ Elective	3 3 3 3 3
<i>Total</i>	<i>16</i>	<i>Total</i>	<i>15</i>
Year Four			
MTH 405 Numerical Analysis Prerequisites: MTH 204, CIS 161 or 162, and either MTH 302 or 304 ⁶ MTH Elective Issue ³ Elective ³ Elective	3 3 3 3 3	MTH 490 Mathematics Internship Seminar (Capstone) Prerequisites: Permission of instructor and senior standing OR MTH 498 Project-Based Applied Mathematics (Capstone) Prerequisites: MTH 205, 210, 305, and permission of instructor. Restricted to math majors. ⁶ MTH Elective Issue ³ Elective ³ Elective	2-3 3 3 3 3
<i>Total</i>	<i>15</i>	<i>Total</i>	<i>14-15</i>

* The block tuition rate is 12-15 credits. You will pay additional tuition for any credits over 15.

MTH 124 is designed for calculus-bound students as a replacement for MTH 122 & 123. While students can still fulfill the MTH 201 prerequisite by taking MTH 122 & 123, MTH 124 is strongly recommended for students who plan to major in mathematics.¹ **Students must fulfill MTH 110, MTH 122, and MTH 123, or MTH 124 or waive the requirement through math placement. These courses do not count towards the completion of the Mathematics major.**² Students who self-place into WRT 098 should take this courser in the fall semester and then take WRT 150 in the winter semester of the first year. Students who self-place into WRT 150 should take this course in the winter semester of the first year. A grade of C or higher is required to fulfill the WRT 150 requirement.

It is imperative to meet with your faculty advisor and an advisor in the CLAS Academic Advising Center regularly.

The CLAS Academic Advising Center is located in C-1-140 MAK, 616-331-8585.

Your academic advisor in the CLAS Academic Advising Center is Nick Woodward (woodwani@gvsu.edu)Online at: <http://www.gvsu.edu/clasadvising>

³ Elective refers to any course to help you earn the required 120 credits to graduate.

⁴ Students must complete a total of two courses with an SWS attribute.

⁵ Students that transfer in MTH 302 are not required to take MTH 204 + 304. Instead take an additional math elective from the list below.

⁶ Mathematics students must complete a total of 13 courses in Math. These electives are listed on the below.

Degree Requirements

Mathematics students can pursue a Bachelor of Arts or Bachelor of Science degree. Students who wish to obtain a BA must fulfill 3rd semester proficiency in a foreign language (201 level). The BS requirements are incorporated into the major requirements and include MTH 201, MTH 202, and STA 312.

Declaring the Mathematics Major:

1. Log into myBanner from the GVSU homepage
2. Once logged in, select "Student," "Student Records," and then "Change Major"
3. Click on the "Change Major 1/Program" box
4. Click on the down arrow in the box next to "New Major 1/Program"
5. From here scroll down and find "Mathematics - Applied." There are two options BA or BS. Click on the option you prefer.
6. Click "Submit" and then click "Change to New Program"

General Education Overlap

General Education Categories fulfilled by the Mathematics Major:
Mathematical Sciences: MTH 201

Additional Courses

Choose from the following list for a total of 13 courses in mathematics – electives must be at the 300 level or higher

MTH 315 Discrete Mathematics	MTH 441 Topology
MTH 401 Mathematics for the Physical Sciences	MTH 450 Modern Algebra II
MTH 402 Complex Variables	MTH 465 Automata and Theory of Computation
MTH 406 Linear Algebra III	MTH 496 Senior Thesis
MTH 408 Advanced Calculus I	

With unit head permission: MTH 380, 386, 387, 399, and 480

Courses not applicable as Math electives are: MTH 300, 312, 322, 323, 324, 325, 329, 331, 350, 409, 431, 450, and 495.