MATHEMATICS-APPLIED EMPHASIS (STARTING IN MTH 124)

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 124 Precalculus: Functions and Models GE Math
   Prerequisite: MTH 110 or proficiency through math placement
   SEE NOTE BELOW REGARDING OPTIONS FOR THIS COURSE
   Prerequisite: MTH 097 or proficiency through math placement
	5	MTH 201 Calculus I
		   Prerequisites: Both MTH 122 and MTH 123; or MTH 124; or
		   proficiency through math placement
			4

Gen Ed GE Art or [2]WRT 120 (self-placement)	3	[5]MTH 204 Linear Algebra I
		   Prerequisites: MTH 122 and MTH 123; or MTH 124; or proficiency
		   through math placement
			3

Gen Ed GE Social/Behavioral	3	[2]WRT 130 or 150 GE Writing	3/4
[3]Elective	3	Gen Ed GE Philosophy and Literature	3
[3]Elective	1	[3]Elective	1
		[3]Elective	1
Total	15	*Total*	15-16*
Year Two			

MTH 202 Calculus II
   Prerequisite: MTH 201
	4	MTH 203 Calculus III
		   Prerequisite: MTH 202
			4

MTH 205 Linear Algebra II
   Prerequisites: MTH 204 or MTH 302
	3	[4]MTH 210 SWS Communicating in Mathematics
		   Prerequisites: Gen Ed Foundations – Writing and MTH 201
			4

Gen Ed GE Social/Behavioral	3	CIS 161 Computational Science (recommended) Prerequisites: MTH 201	3/4
Gen Ed GE Physical/Life Science with Lab	4	**OR** CIS 162 Computer Science I Prerequisites: MTH 110	
[3]Elective	1	Gen Ed GE Physical/Life Science without Lab	3
		[3]Elective	1
Total	15	*Total*	15-16*
Year Three			

[5]MTH 304 Analysis of Differential Equations
   Prerequisites: MTH 202 and 204
	3	MTH 305 Mathematical Modeling
		   Prerequisites: MTH 302 or MTH 304 (MTH 304 may be taken
		   concurrently); and CIS 161 or CIS 162
			3

STA 216 Intermediate Applied Statistics
   Prerequisites: STA 215 or STA 312
	3/4	MTH 360 Operations Research
		   Prerequisites: MTH 204 or 302
			3

OR STA 312 Probability and Statistics Prerequisites: MTH 201		Gen Ed GE Global Perspectives	3
OR STA 412 Computer Science I Prerequisites: MTH 202 and (STA 215 or STA 312)		[3]Elective	3
[3]Elective	3	[3]Elective	3
Gen Ed GE US Diversity	3		
Gen Ed GE Historical Analysis	3		
Total	15-16*	*Total*	15
Year Four			

[6]MTH Elective	3	[8]MTH 498 Project-Based Applied Mathematics
		  (Capstone)
		   Prerequisites: MTH 205, 210, 305, and permission of instructor.
		   Restricted to math majors.
			3

MTH 405 Numerical Analysis
   Prerequisites: CIS 161 or 162; and either MTH 202 and MTH 204 or
   MTH 302
	3		

Issues Gen Ed	3	[6]MTH Elective (if necessary)	3
[3]Elective	3	Issues Gen Ed	3
[3]Elective	3	[2]Elective	3
		[2]Elective	3
Total	15	*Total*	15

* 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 120 should take this course in the fall semester and then take WRT 130 in the winter semester of their first year. Students who self-place into WRT 150 can take it either semester during their first year. Students will not need to take WRT 150 if they have earned credit for the course through AP/Dual Enrollment. A grade of C or better is required in WRT 130 or 150 in order to satisfy the WRT requirement at GVSU.

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.
Online at: http://www.gvsu.edu/clasadvising

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.

To earn a degree from GVSU, all students must complete the following: 120 total credits, all major/minor requirements, all general education requirements, at least 58 credits from a 4-year institution, and the last 30 credits of the degree completed through GVSU.

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: at least one must be 400-level MTH class, and at most one from this list can have a non-MTH prefix.

MTH 296 Introduction to Mathematical Research	MTH 441 Topology
(MTH 300 Vector Analysis) **OR** (MTH 401 Math for the Physical Sciences)	MTH 450 Modern Algebra II
MTH 315 Discrete Mathematics	MTH 465 Automata and Theory of Computation
MTH 350 Modern Algebra I	MTH 496 Senior Thesis
MTH 402 Complex Variables	MTH 498 (if MTH 490 is taken as capstone)
MTH 406 Linear Algebra III	STA 412 Mathematical Statistics I (Can only count in one place)
MTH 408 Real Analysis I	

With unit head permission: MTH 380, 399, 480 and 499

Courses not applicable as Math electives are: MTH 312, 322, 323, 324, 325[7], 329, 331, 386, 409, 431, and 495.

MTH Cognate Courses
Required
CIS 161 Computational Science
OR
CIS 162 Computer Science I
And
STA 216 Intermediate Applied Statistics
OR
STA 312 Probability and Statistics
OR
STA 412 Mathematical Statistics I (Can only count in one place)