MATHEMATICS-APPLIED EMPHASIS (STARTING IN MTH 201)

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

MTH 201 Calculus I GE Math
    Prerequisites: MTH 122 and MTH 123; or MTH 124; or proficiency through math placement
	4	MTH 202 Calculus II
		    Prerequisite: MTH 201
			4

		[4] MTH 204 Linear Algebra I Prerequisites: MTH 122 and MTH 123; or MTH 124; or proficiency through math placement	3
Gen Ed GE Art or [2]WRT 120 (self-placement)	3		
Gen Ed GE Social/Behavioral	3	[1]WRT 130 or 150 GE Writing	3 or 4
[2]Elective	3	Gen Ed GE Physical/Life Science without Lab	3
[2]Elective	1	[2]Elective	1
[2]Elective	1	[2]Elective	1
Total	15	*Total*	15/16*

Year Two

[3]MTH 210 SWS Communicating in Mathematics
    Prerequisites: Gen Ed Foundations – Writing and MTH 201
	4	MTH 304 Analysis of Differential Equations
		    Prerequisites: MTH 202 and MTH 204
			3

MTH 203 Calculus III Prerequisite: MTH 202	4	CIS 161 Computational Science (recommended) ***OR* CIS 162 Computer Science I**	3 or 4
Gen Ed GE Social/Behavioral	3	Gen Ed GE Historical Analysis	3
Gen Ed GE Physical/Life Science with Lab	4	Gen Ed GE Philosophy and Literature	3
		[2]Elective	3
Total	15	*Total*	15-16*

Year Three

[4]MTH 205 Linear Algebra II
    Prerequisites: MTH 204 or MTH 302
	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 312 Probability and Statistics
    Prerequisites: MTH 201
	3	MTH 360 Operations Research
		    Prerequisites: MTH 204 or 302
			3

[2]Elective	3	Gen Ed GE US Diversity	3
Gen Ed GE Global Perspectives	3	[2]Elective	3
[2]Elective	3	[2]Elective	3
Total	15	*Total*	15

Year Four

MTH 405 Numerical Analysis
    Prerequisites: CIS 161 or CIS 162; and either MTH 202 and MTH 204 or MTH 302
	3	MTH 490 Mathematics Internship Seminar (Capstone)
		    Prerequisites: Approval of the department and junior standing
		***OR* MTH 498 Project-Based Applied Mathematics (Capstone)**
		    Prerequisites: MTH 205, 210, 305, and permission of instructor. Restricted to math majors.
			2 or 3

[5]MTH Elective	3	[5]MTH Elective	3
Issue	3	Issue	3
[2]Elective	3	[2]Elective	3
[2]Elective	3	[2]Elective	3
		[2]Elective (if necessary)	1
Total	15	*Total*	15/16*

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

[1]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.

[2] Elective refers to any course to help you earn the required 120 credits to graduate.

[3] Students must complete a total of two courses with an SWS attribute.

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

[5] Mathematics students must complete a total of 13 courses in Math. These electives are listed on the back.

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"

<p align="center">General Education Overlap</p>

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 465 Automata and Theory of Computation
MTH 402 Complex Variables	MTH 496 Senior Thesis
MTH 406 Linear Algebra III	MTH 498 (if MTH 490 is taken as capstone)
MTH 408 Real Analysis I	
With unit head permission: MTH 380, 387, 399, 480 and 499	

Courses not applicable as Math electives are: MTH 300, 312, 322, 323, 324, 325, 329, 331, 350, 386, 409, 431, 450, and 495.

MTH Cognate Courses
Required
CIS 161 Computational Science **Or** CIS 162 Computer Science I **And** STA 312 Probability and Statistics