COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2019-2020

MATHEMATICS-THEORETICAL 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			
[1]MTH 201 Calculus I Prerequisites: MTH 122 and MTH 123, or MTH 124, or proficiency through math placement	4	MTH 202 Calculus II Prerequisite: MTH 201	4
Gen Ed or [3]WRT 098 (self-placement)	3	MTH 204 Linear Algebra I (formerly MTH 227) Prerequisites: MTH 122 and MTH 123, or MTH 124, or proficiency through math placement	3
Gen Ed		[3]WRT 150 Strategies in Writing	4
[5]Elective		Gen Ed	3
	3/4	[5]Elective	1
	3		
	1		
Total	*14/15*	*Total*	*15*
Year Two			
[2]MTH 210 SWS Communicating in Mathematics Prerequisites: WRT 150 and MTH 201	4	[5]MTH Elective	3
MTH 203 Calculus III Prerequisite: MTH 202	4	MTH 205 Linear Algebra II (formerly MTH 327) Prerequisites: MTH 204 or 302)	3
Gen Ed	3	[4]CIS 161 Computational Science (recommended)	3-4
Gen Ed	3	***OR*** CIS 160 I Programming with Visual Basic	
[5]Elective	1	***OR*** CIS 162 Computer Science I	
		Gen Ed	3
		Gen Ed	3
		[5]Elective	1
Total	*15*	*Total*	*14-15*
Year Three			
STA 312 Probability and Statistics Prerequisites: MTH 201	3	[4] MTH Elective	3
MTH 350 Prerequisites: MTH 210 and either MTH 204 or 225	3	MTH Cognate	3-4
[5]Elective	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
[5]Elective	3	[5]Elective	3
Total	*15*	*Total*	*15-16**
Year Four			
MTH 408 Advanced Calculus I Prerequisites: MTH 203 and MTH 210	3	[7]MTH 495: The Nature of Modern Mathematics Prerequisites: MTH 210, MTH 227, MTH 350, and at least one other 300-400 level mathematics courses	3
[4] MTH Elective 400 level	3	***OR*** MTH 496 Project-Based Applied Mathematics (Capstone) Prerequisites: 27 credits in major, major GPA of 3.0 or better, and permission of instructor	3
Issue	3	Issue	3
[6]Elective	3	[5]Elective	3
[5]Elective	3	[5]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 must complete a total of two courses with an SWS attribute.

[3] 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.

[4] Mathematics students must complete three Math Cognate Courses. These courses are listed on the back of this guide.

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

[5] Mathematics students must complete a total of 12 courses in Math. These electives are listed on the back of this guide.
[6] Elective refers to any course to help you earn the required 120 credits to graduate.
[7]Students may also complete MTH 496 – Senior Thesis - as the capstone requirement. Consult with your mathematics faculty advisor to discuss these options.

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 – Theoretical 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 - Theoretical." 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 Categories fulfilled by the Mathematics Major:
Mathematical Sciences: MTH 201

Additional Courses Choose from the following list for a total of 12 courses in mathematics – electives must be at the 300 level or higher At least one math elective MUST be at the 400 level	
MTH 300 Vector Analysis	MTH 406 Linear Algebra III
MTH 304 Analysis of Differential Equations	MTH 409 Advanced Calculus II
MTH 305 Mathematical Modeling	MTH 431 Non-Euclidean Geometry
MTH 315 Discrete Mathematics	MTH 441 Topology
MTH 360 Operations Research	MTH 450 Modern Algebra II
MTH 401 Mathematics for the Physical Sciences	MTH 465 Automata and Theory of Computation
MTH 402 Complex Variables	MTH 495 Nature of Modern Math (if MTH 496 is taken as capstone)
MTH 405 Numerical Analysis	MTH 496 Senior Thesis (if MTH 495 is taken as capstone)
	MTH 498 Project-Based Applied Mathematics
With unit head permission: MTH 380, 386, 387, 399, 480, and 490	

Courses not applicable as Math electives are: MTH 302, 312, 322, 323, 324, 325, 329, and 331

Math Cognate Courses		
Required	**Pick ONE of the following**	
CIS 161 Computational Science	BIO 355 Human Genetics	HSC 201 The Scientific Revolution
Or	BIO 375 Genetics	PHI 203 Intermediate Logic
CIS 162 Computer Science I	CHM 351 Introduction to Physical Chemistry	PHY 230 Principles of Physics I
And	CMB 351 Bioinformatics	PSY 300 Research Methods in Psychology
STA 312 Probability and Statistics	CMB 452 Computational Biology	STA 314 Statistical Quality Methods
	ECO 400 Econometrics and Forecasting	STA 412 Mathematical Statistics I
	GEO 470 Geophysics	