COLLEGE OF LIBERAL ARTS AND SCIENCES (CLAS) ACADEMIC ADVISING CENTER 2023-2024

GENERAL PHYSICS- BS

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 & MTH 123 or MTH 124 or Math placement exam	4	MTH 202 Calculus II Prerequisite: MTH 201	4
CHM 115 Principles of Chemistry I Prerequisites: High school chemistry & MTH 110	*4 (6)	[4]**PHY 230** Principles of Physics I (Physical Science w/Lab) Prerequisite: MTH 201 Corequisite: MTH 202	*5 (7)
General Education (Arts) or [2]WRT 120 (*self-placement*)	3	[2]WRT 130 or WRT 150 Strategies in Writing (*self-placement*)	3-4
General Education (Philosophy & Literature)	3	General Education (Life Science w/no Lab)	3
[3]Elective	1		
Total	*15**	*Total*	*15/16*
Year Two			
MTH 203 Calculus III Prerequisite: MTH 202	4	**PHY 302** Introduction to Modern Physics Winter Only Prerequisite: PHY 231	*4 (6)
[5]MTH 204 Linear Algebra I (required if taking MTH 304 – see note) Prerequisite: MTH 122 & MTH 123 or MTH 124 or Math placement exam	3	[5]MTH 302 Linear Algebra & Differential Equations Prerequisite: MTH 203	4
PHY 231 Principles of Physics II Prerequisites: MTH 202 & PHY 230	*5 (7)	***OR*** MTH 304 Analysis of Differential Equations Prerequisites: MTH 203 & MTH 204	3
[6]General Education (*SWS if needed*) (Historical Analysis)	3	[7]CIS 162 Computer Science I Prerequisite: MTH 110	3
		OR CIS 261 Structured Programming in C Prerequisite: MTH 201 (*may be taken concurrently*)	4
		General Education (Social Behavioral Science)	3
		[10]Elective	1-2
Total	*15*	*Total*	*14/15*
Year Three			
[6]**PHY 309** Experimental Methods in Physics (*SWS*) Fall Only Prerequisites: PHY 302 & SWS	*4 (6)	[6]**PHY 311** Advanced Laboratory II (*SWS*) Winter Only Prerequisites: PHY 309 & SWS	*2 (6)
PHY 330 Intermediate Mechanics Fall Only Prerequisites: PHY 230 or permission of instructor & MTH 302 or 304	4	**PHY 340** Electromagnetic Fields Winter Only Prerequisites: PHY 231 & MTH 302 or MTH 304	4
[8]MTH 401 Mathematics for the Physical Sciences Fall Only Prerequisites: MTH 302 or 304, PHY 231, or permission of instructor	4	General Education (U.S. Diversity)	3
		Issues	3
OR MTH 300 Vector Analysis Winter Only Prerequisite: MTH 203	3	[10]Elective	3
General Education (Social Behavioral Science)	3		
[10]Elective	1		
Total	*15*	*Total*	*15*
Year Four			
PHY 350 Introduction to Quantum Mechanics Fall Only Prerequisites: PHY 302 & MTH 302 or 304 (*MTH 300 recommended*)	4	**PHY 360** Statistical Thermodynamics Winter Only Prerequisite: PHY 231	4
PHY 485 Senior Physics Project (*Capstone*) Fall Only Prerequisite: Senior physics students & good academic standing	1	**PHY 486** Senior Physics Project (*Capstone)* Winter Only Prerequisites: PHY 485	*2 (9)
[9]Science Elective	3	[9]Science Elective	3
[9]Science Elective	3	Issues	3
General Education ***OR*** [10]Elective	3-4	General Education (Global Perspectives)	3
Total	*15*	*Total*	*15*

[1]Students must take MTH 110, MTH 122, and MTH 123 or waive these courses through Grand Valley math placement to take MTH 201. These courses do not count towards the completion of the Physics 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. WRT 150 can take it in 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 (***NOT A C-***) is required in WRT 130 or 150 to satisfy the WRT requirement.

[3]Number of 1 - credit classes electives are dependent on WRT placement.

[4]Students who plan to apply to graduate school in physics should take PHY 430, 440, and 450, which are offered alternate years; please confer with your physics faculty advisor for a specific degree plan dependent on when you complete PHY 230.

[5]Students must complete 2 courses with an SWS attribute.

[6]Physics majors intending to go to graduate school should take MTH 204 & MTH 304 rather than the MTH 302 option. Please see faculty advisor for assistance in choosing appropriate course.

[7]See faculty advisor for additional options for computer science courses.

[8]MTH 401 is recommended instead of MTH 300 for students planning to pursue graduate school, please see faculty advisor for assistance in choosing appropriate course.

It is imperative to meet with your ***FACULTY ADVISOR*** and an ***ADVISOR IN THE CLAS ACADEMIC ADVISING CENTER*** regularly.

Your academic advisors are Alyssa Myers (gunnalys@gvsu.edu) and Khalaya Daniels (daniekha@gvsu.edu).

[9]Students must complete 6 hours of science electives with a minimum grade of C **(NOT C-)** in each. Must be chosen from the following: PHY 105 (*requirement for secondary education majors*); any 300 or 400 level physics electives (*excluding PHY 303, 306, and 307*); CHM 351, 352, 356, or 358.
[10]Elective refers to any course to help you earn the required 120 credits to graduate. However, students should consider adding a complementary minor or certificate. See advisor for more information.
*The block tuition rate is for 12-15 credits. You will pay additional tuition for any credits over 15. For more information contact the Office of Financial Aid.
*A major GPA of 2.0 or higher within the major is required to graduate.
*Credit hours in parentheses refer to contact hours – the number of hours spent studying or doing classwork.

Declaring the Physics-General Major:

1. In myBanner, select "Student" > "Student Records" > "Change Major" > "Change Major 1/Program."
2. Choose "Physics-BS" from the drop-down box.
3. Click "Submit" and then "Change to New Program."

General Education Overlap

General Education Categories fulfilled by the Physics Major:	
Mathematical Sciences: MTH 201	Physical Science with Lab: CHM 115

1. The CLAS Academic Advising Center is located in C-1-120 MAK, 616-331-8585 http://www.gvsu.edu/clasadvising (Also find us on Facebook and Instagram)
2. Preprofessional Students (Prechiropractic, Predental, Premedical, Preoptometry, Prepharmacy, Prepodiatry, & Preveterinary): *Keep in mind that you may major in anything so long as you complete the prerequisites for your professional program.*
3. To find more information on Preprofessional programs, visit www.gvsu.edu/clasadvising/preprofessional
4. To schedule an appointment with a Physics and/or Preprofessional Advisor in the CLAS Academic Advising Center, visit www.gvsu.edu/clasadvising and click on "Schedule Appointment."