MATHEMATICS MAJOR (BS)

Department website (https://www.uwp.edu/learn/programs/mathematicsmajor.cfm)

College: College of Natural & Health Sciences

The major in mathematics includes options in pure and applied mathematics and teaching mathematics in middle childhood through early adolescence.

Mathematics with a Second Major

Students are encouraged to consider combining a major in mathematics with a major in a related area, such as computer science, behavioral science, a physical science business or economics. This has the advantage of enhancing the understanding of two allied areas, as well as improving the prospects for employment after graduation.

1. Formulate and prove mathematical results in the language of mathematics.
2. Perform technical mathematical computations in mathematics and related fields.
3. Translate ideas and meanings from the language of everyday life (English) into mathematical language (formulas and symbols).
4. Communicate in the language of mathematics.
5. Search for knowledge in independent and responsible ways.

Requirements for the Mathematics Major

To be eligible for entrance into the mathematics major students must have successfully completed MATH 221 Calculus and Analytic Geometry I and MATH 222 Calculus and Analytic Geometry II with a grade of C or better in each, or at the discretion of the Department. Upon declaring a major in mathematics, students must consult with a mathematics advisor to set up a program of study.

At least 15 credits of upper-level courses in the major must be completed at UW-Parkside.

Students may satisfy a mathematics major by completing the mathematics core and one of the following options or, upon consultation with a mathematics advisor, by developing programs to suit their special needs, subject to the written approval of the Mathematics Department. The following options are minimal, and students are encouraged to elect additional advanced mathematics courses.

Code	Title	Credits
College of Natural and Health Sciences requirement		
New entering students, and transfer students with less than 30 college credits, choosing a major in the College of Natural and Health Sciences are required to take this course.		
UWP 101	First Year Seminar: Natural and Health Sciences	1
Required Core Courses [1]		
MATH 221	Calculus and Analytic Geometry I	5
MATH 222	Calculus and Analytic Geometry II	5
MATH 223	Calculus and Analytic Geometry III	5
MATH 301	Linear Algebra	4
MATH 303	Set Theory, Logic and Proof	4
Required Core Courses Subtotal		24
Completion Options		

Choose one option		20-24
Completion Options Subtotal		20-24
Total Credits		**44-48**

[1] These courses provide the background concepts and techniques required in upper-level mathematics offerings.

Completion Options

General Mathematics Option

This sequence of courses leads to an undergraduate mathematics major covering the principal areas of modern mathematics. It is recommended for students planning to study mathematics in graduate school. Students in this program are required to take all of the courses in the Mathematics Core in addition to those listed below. Students are also encouraged to broaden their mathematics background by electing additional advanced courses.

Code	Title	Credits
Required Math Courses		
MATH 350	Advanced Calculus	4
or MATH 451	Topology	
Required Math Courses Subtotal		4
300-Level Math Elective		
Select three of the following:		10-12
MATH 310	Advanced Probability Theory and Statistics	
MATH 317	Differential Equations and their Applications	
MATH 331	Logic and Combinatorics	
MATH 361	Foundations of Geometry	
MATH 367	Elementary Number Theory	
300-Level Math Elective Subtotal		10-12
400-Level Math Elective		
Select two 400-level courses [1]		6-8
400-Level Math Elective Subtotal		6-8
Total Credits		**20-24**

[1] Not MATH 495 Senior Seminar or MATH 499 Independent Study.

Applied Mathematics Option

This sequence of courses is intended for those students who are interested in mathematics and the application of mathematics. Students in this program are required to take all of the courses in the mathematics core together with those listed below. They are also encouraged to broaden their mathematics background by electing additional advanced courses.

Code	Title	Credits
Required Math Courses		
MATH 310	Advanced Probability Theory and Statistics	4
MATH 317	Differential Equations and their Applications	4
MATH 350	Advanced Calculus	4
MATH 368	Mathematical Modeling (Same As CSCI 368)	3
MATH 401	Applied Mathematics	3
or PHYS 401	Mathematical Methods of Physics	
Required Math Courses Subtotal		18
Math Elective Course		

MATH 423	Complex Analysis	4
or MATH 441	Abstract Algebra	
Math Elective Course Subtotal		4
Total Credits		**22**

General University Degree Requirements (Bachelor's Degree)

In addition to individual program requirements, students must also fulfill the following requirements:

Requirement	Credits
Skills	7-8
General Education	36
Foreign Language**	6-8
Ethnic Diversity	3
Total	52-55

** Transfer students in sustainable management, and health information management and technology collaborative, online degree-completion programs, the business management online degree-completion program, and the flexible option degree-completion program will be exempt from the university's foreign language requirement. See appropriate academic section for further information.

Skills Requirement (https://catalog.uwp.edu/policies/#skills)

Code	Title	Credits
Reading and Writing		
ENGL 101	Composition and Reading	3
Computational Skills		
Select one of the following:		4-5
MATH 102	Quantitative Reasoning	
MATH 103	Elementary Statistics	
MATH 104	College Mathematics with Applications	
MATH 111	College Algebra I	
Total Credits		**7-8**

General Education (https://catalog.uwp.edu/policies/#general)

- General Education Course List (https://catalog.uwp.edu/programs/general-education-program/#coursestext)

Foreign Language (https://catalog.uwp.edu/policies/#language)

Ethnic Diversity (https://catalog.uwp.edu/policies/#ethnic)

Degree Requirements

Requirement	Credits
Minimum Total Credits	120
Upper Level Credits (300 level or above)	36
Residency	30

Cumulative Degree GPA: 2.0 minimum

Course	Title	Credits
Year 1		
Fall Semester		
MATH 102	Quantitative Reasoning	4
ENGL 100	Fundamentals of English	3
Introductory Language		4
COMM 107	Communication and the Human Condition	3
	Credits	**14**
Spring Semester		
ENGL 101	Composition and Reading	3
COMM 105	Public Speaking for the 21st Century	3
or COMM 205	or Oral Interpretation	
COMM 108	Media and Society	3
Introductory Language		4
	Credits	**13**
	Total Credits	**27**