



Program Guidebook

Master of Arts, Mathematics Education (K-6)

The Master of Arts in Mathematics Education (K-6) is a competency-based degree program that prepares already licensed teachers both to teach mathematics in grades K - 6 and to develop significant skills in mathematics curriculum development, design, and evaluation. All work in this degree program is online, and includes Mathematics Content and Research Fundamentals. All students complete a Capstone Project.

Understanding the Competency-Based Approach

Practically speaking, what does it mean when we say that WGU's programs are competency-based? Unlike traditional universities, WGU does not award degrees based on credit hours or on a certain set of required courses. Instead, you will earn your degree by demonstrating your skills, knowledge, and understanding of important concepts through a series of carefully designed courses.

Progress through your degree program is governed not by classes but by satisfactory completion of the required courses that demonstrate your mastery of the competencies. Of course, you will need to engage in learning experiences as you brush up on competencies or develop knowledge and skills in areas in which you may be weak. For this learning and development, WGU has a rich array of learning resources in which you may engage under the direction of your student mentor. You will work closely with your mentor to schedule your program for completing the courses. You will also work closely with additional faculty members as you proceed through courses of study that are designed to lead you through the content you must master in order to pass the assessment(s) for each course.

The benefit of this competency-based system is that it makes it possible for people who are knowledgeable about a particular subject to make accelerated progress toward completing a WGU degree, even if they lack college experience. You may have gained skills and knowledge of a subject while on the job, accumulated wisdom through years of life experience, or, indeed, taken a course on a particular subject. WGU will award your degree based on the skills and knowledge that you possess and can demonstrate—not the number of credits hours on your transcript.

Accreditation

Western Governors University is the only university in the history of American higher education to have earned accreditation from four regional accrediting commissions. WGU's accreditation was awarded by (1) the Northwest Commission on Colleges and Universities, (2) the Higher Learning Commission of the North Central Association of Colleges and Schools, (3) the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, and (4) the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges. The university's accreditation status is now managed by the Northwest Commission on Colleges and Universities (NWCCU). The WGU Teachers College is accredited by the National Council for Accreditation of Teacher Education (NCATE). The nursing programs are accredited by the Commission on Collegiate Nursing Education (CCNE). The Health Informatics program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

The Degree Plan

The focus of your program is your personalized Degree Plan. The Degree Plan is a detailed blueprint of the courses you will need to complete in order to earn your degree. The Degree Plan also lays out the accompanying learning resources and assessments that compose your program. The list of courses in the Degree Plan is often referred to as the standard path. The amount of time it takes to complete your program depends on both the amount of new information you need to learn and the amount of time you plan to devote each week to study.

Students will vary widely in the specific skills and information they need to learn. For example, some students may be highly knowledgeable in a particular subject matter and would not need to engage in new learning opportunities. Other students may find that portions of the program require them to learn new information and that they may need to take an online class or participate in a study module to acquire the knowledge and skills needed to pass the program competencies in that area. Some individuals may be able to devote as little as 15–20 hours per week to the program, while others may need to devote more time. For this reason, you will complete preassessments to help your mentor form a profile of your prior knowledge and experience for use in creating your personalized Degree Plan.

WGU's Mentoring Approach

The mentoring approach is a powerful component of the WGU educational experience. When you enroll at WGU, you will begin interacting with your student mentor, course mentors, and other support staff. Your student mentor will meet with you on a regular basis and take an active role and a personal interest in your success. Your student mentor will be your point of contact throughout your program and will be available to communicate with you via e-mail or phone. Your mentor will help you set weekly study goals, guide you to learning materials, help you understand what to expect in courses, and motivate you to work hard to complete your program. When you have questions or concerns, your mentor will help you resolve them.

As you work on each course, you will also be assigned course mentors. These course mentors are content experts who can discuss your learning for the course, help you find answers to content questions, and help you navigate the course successfully. Your course mentors are available to meet with you individually to provide personal support. You can also communicate with them by posting in the online learning community and participating in live discussion sessions such as webinars and cohorts.

Working closely with your own personal mentoring team will help you engage in the learning process and be a successful student while at WGU.

Connecting with Other Mentors and Fellow Students

As you proceed through your Degree Plan, you will have direct contact with multiple faculty members. These communications can take a variety of forms, including participation in one-on-one discussions, chats in the learning communities, and live cohort and webinar opportunities. As a WGU student, you will have access to your own personal myWGU Student Portal, which will provide a gateway to your courses of study, learning resources, and learning communities where you will have interactions with faculty and other students.

The resources in each course are specifically designed to support you as you develop competencies in preparation for your assessments through the utilization of reading materials, videos, tutorials, cohort opportunities, community discussions, and live discussions that are guided by content experts. You will access your program community during your orientation course to network with peers who are enrolled in your program and to receive continued support through professional enrichment and program-specific chats, blogs, and discussions. WGU also provides Student Services Associates to help you and your mentor solve any special problems that may arise.

Orientation

The WGU orientation course focuses on acquainting you with WGU's competency-based model, distance education, technology, and other resources and tools available for students. You will also utilize WGU program and course communities, participate in activities, and get to know other students at WGU. The orientation course must be completed before you can start your first term at WGU.

Transferability of Prior College Coursework

Because WGU is a competency-based institution, it does not award degrees based on credits but rather on demonstration of competency. However, if you have completed college coursework at another accredited institution, or if you have completed industry certifications, you may have your transcripts and certifications evaluated to determine if you are eligible to receive some transfer credit. The guidelines for determining what credits will be granted varies based on the degree program. Students entering graduate programs must have their undergraduate degree verified before being admitted to WGU. To review more information in regards to transfer guidelines based on the different degree programs, you may visit the Student Handbook found at the link below and search for "Transfer Credit Evaluation." Within the Teachers College, there may be additional courses to meet state requirements.

[Click here for the Student Handbook](#)

WGU does not waive any requirements based on a student's professional experience and does not perform a "résumé review" or "portfolio review" that will automatically waive any degree requirements. Degree requirements and transferability rules are subject to change in order to keep the degree content relevant and current.

Remember, WGU's competency-based approach lets you take advantage of your knowledge and skills, regardless of how you obtained them. Even when you do not directly receive credit, the knowledge you possess may help you accelerate the time it takes to complete your degree program.

Continuous Enrollment, On Time Progress, and Satisfactory Academic Progress

WGU is a "continuous enrollment" institution, which means you will be automatically enrolled in each of your new terms while you are at WGU. Each term is six months long. Longer terms and continuous enrollment allow you to focus on your studies without the hassle of unnatural breaks between terms that you would experience at a more traditional university. At the end of every six-month term, you and your student mentor will review the progress you have made and revise your Degree Plan for your next six-month term.

WGU requires that students make measurable progress toward the completion of their degree programs every term. We call this "On-Time Progress," denoting that you are on track and making progress toward on-time graduation. As full-time students, graduate students must enroll in at least eight (8) competency units each term, and undergraduate students must enroll in at least twelve (12) competency units each term. Completing at least these minimum enrollments is essential to On-Time Progress and serves as a baseline from which you may accelerate your program. We measure your progress based on the courses you are able to pass, not on your accumulation of credit hours or course grades. Every time you pass a course you are demonstrating that you have mastered skills and knowledge in your degree program. For comparison to traditional grading systems, passing a course means you have

demonstrated competency equivalent to a “B” grade or better.

WGU assigns competency units to each course in order to track your progress through the program. A competency unit is equivalent to one semester credit of learning. Some courses may be assigned 3 competency units while others may be as large as 12 competency units.

Satisfactory Academic Progress (SAP) is particularly important to students on financial aid because you must achieve SAP in order to maintain eligibility for financial aid. We will measure your SAP quantitatively by reviewing the number of competency units you have completed each term. In order to remain in good academic standing, you must complete at least 66.67% of the units you attempt over the length of your program—including any courses you add to your term to accelerate your progress. Additionally, during your first term at WGU you must pass at least 3 competency units in order to remain eligible for financial aid. We know that SAP is complex, so please contact a financial aid counselor should you have additional questions. *Please note: The Endorsement Preparation Program in Educational Leadership is not eligible for federal financial aid.

Courses

Your Degree Plan includes courses needed to complete your program. To obtain your degree, you will be required to demonstrate your skills and knowledge by completing the assessment(s) for each course. In general there are two types of assessments: performance assessments and objective assessments. Performance assessments contain, in most cases, multiple scored tasks such as projects, essays, and research papers. Objective assessments include multiple-choice items, multiple-selection items, matching, short answer, drag-and-drop, and point-and-click item types, as well as case study and video-based items. Certifications verified through third parties may also be included in your program. More detailed information about each assessment is provided in each course of study.

External Content & Basic Skills Exams

Western Governors University requires that candidates pass the state-mandated content exam that aligns with their WGU program in addition to a basic skills exam (initial licensure programs only). Specific information regarding required content and basic skills exams required for each program and state can be found in the WGU Student Handbook. In many cases, it is the candidates’ responsibility to register and pay for the required exams and submit their official passing score reports to WGU.

State Licensure Requirements

Many states have specific licensure requirements that are not part of WGU programs that you will have to fulfill in addition to the degree requirements of your program. These state licensure requirements might include, but are not limited to: subject-specific licensure exams, state-specific teacher performance assessments, course work related to state history, basic skills exams, and background clearances. The WGU Student Handbook outlines the credentialing requirements of each state. Teacher candidates should consult the applicable section to become familiar with their state’s expectations regarding licensure.

Learning Resources

WGU works with many different educational partners, including enterprises, publishers, training companies, and higher educational institutions, to provide high-quality and effective learning resources that match the competencies you're developing. These vary in type, and may be combined to create the best learning experience for your course. A learning resource can be an e-textbook, online module, study guide, simulation, virtual lab, tutorial, or a combination of these. The cost of most learning resources are included in your tuition and Learning Resource Fee. They can be accessed or enrolled for through your courses. Some degree-specific resources are not covered by your tuition, and you will need to cover those costs separately. WGU also provides a robust library to help you obtain additional learning resources, as needed.

Mobile Compatibility:

The following article provides additional details about the current state of mobile compatibility for learning resources at WGU. It includes a list that can be referenced to determine the mobile friendliness of all core course materials used in a program.

[Student Handbook article: Can I use my mobile device for learning resources?](#)

Standard Path

As previously mentioned, competency units (CUs) have been assigned to each course in order to measure your academic progress. If you are an undergraduate student, you will be expected to enroll in a minimum of 12 competency units each term. Graduate students are expected to enroll in a minimum of 8 competency units each term. A standard plan for a student for this program who entered WGU without any transfer units would look similar to the one on the following page. Your personal progress can be faster, but your pace will be determined by the extent of your transfer units, your time commitment, and your determination to proceed at a faster rate.

Standard Path *for* Master of Arts, Mathematics Education (K-6)

Course Description	CUs	Term
Number Sense and Functions	4	1
Graphing, Proportional Reasoning and Equations/Inequalities	4	1
Geometry and Statistics	4	2
Mathematics (K-6) Portfolio Oral Defense	2	2
Finite Mathematics	2	2
Research Foundations	2	3
Research Questions and Literature Review	2	3
Research Design and Analysis	2	3
Research Proposals	2	3
MA, Mathematics Education (K-6) Capstone	6	4

Changes to Curriculum

WGU publishes an Institutional Catalog, which describes the academic requirements of each degree program. Although students are required to complete the program version current at the time of their enrollment, WGU may modify requirements and course offerings within that version of the program to maintain the currency and relevance of WGU's competencies and programs. As these changes are implemented, WGU will ensure that the length of the student's degree program (i.e., total competency unit requirements) will not increase and that competency units already earned will be applied to the updated program version. When program requirements are updated, students returning from term break or returning after withdrawal from the university will be expected to re-enter the updated version of the program.

Areas of Study for Master of Arts, Mathematics Education (K-6)

The following section includes the areas of study in the program, with their associated courses. Your specific learning resources and level of instructional support will vary based on the individual competencies you bring to the program and your confidence in developing the knowledge, skills, and abilities required in each area of the degree. The Degree Plan and learning resources are dynamic, so you need to review your Degree Plan and seek the advice of your mentor regarding the resources before you purchase them.

Mathematics Content

Number Sense and Functions

Number Sense and Functions is a performance-based assessment that evaluates a student's portfolio of work. This portfolio includes the student's responses to various prompts and an original lesson plan for each of the mathematics modules such as number sense, patterns and functions, integers and order of operations, fractions, decimals, and percentages.

This course covers the following competencies:

- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies concerning number sense, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities concerning number sense.*
- *The graduate understands the nature of both growing and repeating patterns; and understands functions, tables, rules and equations and how they are related.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies concerning fractions, decimals and percentages, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities concerning fractions, decimals and percentages.*
- *The graduate understands whole numbers and performs the four basic arithmetic operations of addition, subtraction, multiplication and division, including mental calculations and estimation using whole numbers.*
- *The graduate understands fractions, decimals and percentages and uses this knowledge to perform the basic arithmetic algorithms, estimate, and decide upon the equivalence of rational numbers.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies concerning patterns and functions, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities concerning patterns and functions.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies concerning integers and order of operations, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities concerning integers and order of operations.*
- *The graduate understands integers and the order of operations, and performs the four basic operations of addition, subtraction, multiplication and division, including mental arithmetic and estimation, using integers.*

Graphing, Proportional Reasoning and Equations/Inequalities

Graphing, Proportional Reasoning and Equations/Inequalities is a performance-based assessment that evaluates a student's portfolio of work. This portfolio includes the student's responses to various prompts and an original lesson plan for each of the mathematics modules such as coordinate pairs and graphing, ratios and proportional reasoning, and equations and inequalities.

This course covers the following competencies:

- *The graduate understands how to solve linear and quadratic equations and linear inequalities and uses this knowledge to model and solve problems.*

- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies involving equations and inequalities, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities involving equations and inequalities.*
- *The graduate understands ratios, proportions, and rates and uses this understanding to model and solve non-algebraic as well as algebraic problems.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies concerning coordinate pairs and graphing, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities concerning graphing.*
- *The graduate understands ordered pairs, and graphing points and lines in a Cartesian coordinate system, including the following key concepts: slope, intercepts, quadrants, coordinate plane, vertical and horizontal lines, function, and the relationship of ordered pairs to other areas of mathematics and allied fields.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies concerning ratios and proportional reasoning, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities concerning ratios and proportionality.*

Geometry and Statistics

Geometry and Statistics is a performance-based assessment that evaluates a student's portfolio of work. This portfolio includes the student's responses to various prompts and an original lesson plan for each of the mathematics modules such as geometry and measurement, statistics and probability.

This course covers the following competencies:

- *The graduate demonstrates plane geometric and three-dimensional reasoning, concepts and principles and locates, develops and solves real world problems using important geometric and measurement principles.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies involving probability and statistics, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities involving probability, statistics and the evaluation of predictions.*
- *The graduate describes the theory of probability, including the fundamental counting principle, and its relationship to sampling, statistical inference, and how to make and evaluate predictions.*
- *The graduate analyzes, critiques, modifies, develops and evaluates lessons and instructional strategies involving geometry and measurement, analyzes common student errors and misunderstandings, and determines necessary prerequisite skills required for students to complete given activities involving geometry and measurement.*

Mathematics (K-6) Portfolio Oral Defense

Mathematics (K-6) Portfolio Oral Defense: Mathematics (K-6) Portfolio Defense focuses on a formal presentation. The student will present an overview of their teacher work sample (TWS) portfolio discussing the challenges they faced and how they determined whether their goals were accomplished. They will explain the process they went through to develop the TWS portfolio and reflect on the methodologies and outcomes of the strategies discussed in the TWS portfolio. Additionally, they will discuss the strengths and weaknesses of those strategies and how they can apply what they learned from the TWS portfolio in their professional work environment.

This course covers the following competencies:

- *The graduate integrates and synthesizes competencies from across the degree program and thereby demonstrates the ability to participate in and contribute value to the chosen professional field.*

Finite Mathematics

Finite Mathematics covers the knowledge and skills necessary to apply discrete mathematics and properties of number systems to model and solve real-life problems. Topics include sets and operations; prime and composite numbers; GCD and LCM; order of operations; ordering numbers; mathematical systems including modular arithmetic, arithmetic and

geometric sequences, ratio and proportion, subsets of real numbers, logic and truth tables, graphs, trees and networks, and permutation and combination. There are no prerequisites for this course.

This course covers the following competencies:

- *The graduate represents numbers in different forms, recognizes relationships among numbers and number systems, deduces the meanings of operations, and demonstrates a conceptual understanding of numbers.*
- *The graduate applies the fundamental ideas of discrete mathematics including logic, set theory, and graph theory in formulating and solving problems.*
- *The graduate demonstrates computational proficiency with real numbers and recognizes the properties of the real number system and its subsets.*

Research Fundamentals

Research Foundations

The Research Foundations course focuses on the essential concepts in educational research, including quantitative, qualitative, mixed, and action research; measurement and assessment; and strategies for obtaining warranted research results.

This course covers the following competencies:

- *The graduate applies and justifies appropriate research methods and design in quantitative, qualitative, mixed methods, and action research scenarios to address the research question(s).*
- *The graduate analyzes the key aspects of quantitative research and characterizes the major approaches to quantitative research.*
- *The graduate analyzes the key aspects of mixed methods research and characterizes the major approaches to mixed methods research.*
- *The graduate analyzes the characteristics of research quality and the potential threats to the quality of results in qualitative, quantitative, mixed methods, and action research studies.*
- *The graduate analyzes the key aspects of qualitative research and characterizes the major approaches to qualitative research.*
- *The graduate analyzes different measurement scales and differentiates between reliability and validity, and their subtypes, as they relate to assessments.*
- *The graduate evaluates and selects appropriate basic data analysis techniques for quantitative, qualitative, mixed methods, and action research scenarios.*
- *The graduate develops clear research questions that can be investigated and hypotheses that can be tested with empirical data.*
- *The graduate analyzes ethical issues and identifies appropriate procedures for educational research.*
- *The graduate analyzes the key aspects of action research and characterizes the major approaches to action research.*
- *The graduate describes the purpose for a literature review and develops an organized literature review relevant to educational research topics, problems, and questions.*
- *The graduate evaluates the purpose, process, and practice of the generation and justification of knowledge in educational research.*
- *The graduate differentiates among the major methods of data collection, including their strengths and limitations in the selection of an appropriate method of data collection.*
- *The graduate completes a research proposal.*

Research Questions and Literature Review

The Research Questions and Literature Reviews course focuses on how to conduct a thorough literature review that

addresses and identifies important educational research topics, problems, and questions, and helps determine the appropriate kind of research and data needed to answer one's research questions and hypotheses.

This course covers the following competencies:

- *The graduate develops clear research questions that can be investigated and hypotheses that can be tested with empirical data.*
- *The graduate describes the purpose for a literature review and develops an organized literature review relevant to educational research topics, problems, and questions.*
- *The graduate differentiates among the major methods of data collection, including their strengths and limitations in the selection of an appropriate method of data collection.*

Research Design and Analysis

The Research Design and Analysis course focuses on applying strategies for effective design of empirical research studies. Particular emphasis is placed on selecting or constructing the design that will provide the most valid results, analyzing the kind of data that would be obtained, and making defensible interpretations and drawing appropriate conclusions based on the data.

This course covers the following competencies:

- *The graduate applies and justifies appropriate research methods and design in quantitative, qualitative, mixed methods, and action research scenarios to address the research question(s).*
- *The graduate analyzes the key aspects of quantitative research and characterizes the major approaches to quantitative research.*
- *The graduate analyzes the key aspects of mixed methods research and characterizes the major approaches to mixed methods research.*
- *The graduate analyzes the characteristics of research quality and the potential threats to the quality of results in qualitative, quantitative, mixed methods, and action research studies.*
- *The graduate analyzes the key aspects of qualitative research and characterizes the major approaches to qualitative research.*
- *The graduate analyzes different measurement scales and differentiates between reliability and validity, and their subtypes, as they relate to assessments.*
- *The graduate evaluates and selects appropriate basic data analysis techniques for quantitative, qualitative, mixed methods, and action research scenarios.*
- *The graduate analyzes ethical issues and identifies appropriate procedures for educational research.*
- *The graduate analyzes the key aspects of action research and characterizes the major approaches to action research.*
- *The graduate differentiates among the major methods of data collection, including their strengths and limitations in the selection of an appropriate method of data collection.*

Research Proposals

Research Proposals focuses on planning and writing a well-organized and complete research proposal. The relationship of the sections in a research proposal to the sections in a research report will be highlighted.

This course covers the following competencies:

- *The graduate applies and justifies appropriate research methods and design in quantitative, qualitative, mixed methods, and action research scenarios to address the research question(s).*
- *The graduate evaluates and selects appropriate basic data analysis techniques for quantitative, qualitative, mixed methods, and action research scenarios.*
- *The graduate develops clear research questions that can be investigated and hypotheses that can be tested with*

empirical data.

- *The graduate analyzes ethical issues and identifies appropriate procedures for educational research.*
- *The graduate describes the purpose for a literature review and develops an organized literature review relevant to educational research topics, problems, and questions.*
- *The graduate differentiates among the major methods of data collection, including their strengths and limitations in the selection of an appropriate method of data collection.*
- *The graduate completes a research proposal.*

Capstone

MA, Mathematics Education (K-6) Capstone

MA, Mathematics Education (K-6) Capstone Written Project takes the student through the steps of planning and conducting research on a topic or issue related to the students' practice setting. The result is expected to be a significant piece of research, culminating in a written research report, including sections describing a literature review, methodology, and detailed analysis and reporting of results.

This course covers the following competencies:

- *The graduate integrates and synthesizes competencies from across the degree program and thereby demonstrates the ability to participate in and contribute value to the chosen professional field.*

Need More Information? WGU Student Services

WGU's Student Services team is dedicated exclusively to helping you achieve your academic goals. The Student Services office is available during extended hours to assist with general questions and administrative or accessibility issues. The Student Services team members help you resolve issues, listen to student issues and concerns, and make recommendations for improving policy and practice based on student feedback. The Student Services team provides a formal means by which you can express your views, which in turn will inform the decisions we make.

Student Services team members also assist with unresolved concerns to find equitable resolutions. To contact the Student Services team, please feel free to call 877-435-7948 or e-mail studentservices@wgu.edu. We are available Monday through Friday from 6:00 a.m. to 10:00 p.m., Saturday from 7:00 a.m. to 7:00 p.m., mountain standard time. Closed Sundays.

If you have inquiries or concerns that require technical support, please contact the WGU IT Service Desk. The IT Service Desk is available Monday through Friday, 6:00 a.m. to 10:00 p.m. and Saturday and Sunday, 10:00 a.m. to 7:00 p.m., mountain standard time. To contact the IT Service Desk, please call 1-877-HELP-WGU (877-435-7948) or e-mail servicedesk@wgu.edu. The support teams are generally closed in observance of university holidays.

For the most current information regarding WGU support services, please visit "Student Support" on the Student Portal at <http://my.wgu.edu>.