The Bachelor of Arts in Mathematics (5-12) is a competency-based degree program that prepares students to be licensed as mathematics teachers in grades 5-12. All work in this degree program is online with the exception of the Demonstration Teaching and in-classroom field experience components. The program consists of work in Mathematics Content, Teacher Education Foundations and Diversity, Instructional Planning and Presentation and Mathematics Education.
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.

WGCU’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

You will work with your mentor to select the various learning resources needed to prepare for the assessments in each course. In most cases, the learning materials you will use are independent learning resources such as textbooks, e-learning modules, study guides, simulations, virtual labs, and tutorials. WGU works with dozens of educational providers, including enterprises, publishers, training companies, and higher educational institutions to give you high-quality and effective instruction that matches the competencies that you are developing. The cost of most learning resources is included in your tuition, and you can enroll directly in those through your Degree Plan as your mentor has scheduled them. Some resources are not covered by your tuition, and you will need to cover those costs separately. WGU has excellent bookstore and library arrangements to help you obtain the needed 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.
<table>
<thead>
<tr>
<th>Course Description</th>
<th>CUs</th>
<th>Term</th>
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<tbody>
<tr>
<td>College Algebra</td>
<td>4</td>
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<tr>
<td>Foundational Perspectives of Education</td>
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<tr>
<td>English Composition I</td>
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<td>English Composition II</td>
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<td>Pre-Calculus</td>
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<tr>
<td>College Geometry</td>
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<tr>
<td>Elements of Effective Communication</td>
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<tr>
<td>Probability and Statistics I</td>
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<tr>
<td>Probability and Statistics II</td>
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<tr>
<td>Survey of United States History</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Introduction to Humanities</td>
<td>3</td>
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<tr>
<td>Calculus I</td>
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<tr>
<td>Calculus II</td>
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<tr>
<td>Survey of United States Constitution and Government</td>
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<td>4</td>
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<tr>
<td>Calculus III and Analysis</td>
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<td>Integrated Natural Science</td>
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<td>Integrated Natural Science Applications</td>
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<tr>
<td>Linear Algebra</td>
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<td>Mathematics: Content Knowledge</td>
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<tr>
<td>Fundamentals of Educational Psychology</td>
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<tr>
<td>Fundamentals of Diversity, Inclusion, and Exceptional Learners</td>
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<td>6</td>
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<tr>
<td>Abstract Algebra</td>
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<td>6</td>
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<tr>
<td>Classroom Management, Engagement, and Motivation</td>
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<td>6</td>
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<tr>
<td>Educational Assessment</td>
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<tr>
<td>Introduction to Preclinical Experiences</td>
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<td>7</td>
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<tr>
<td>Introduction to Instructional Planning and Presentation</td>
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<td>7</td>
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<tr>
<td>Instructional Planning and Presentation in Mathematics</td>
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<td>Pre-Clinical Experiences in Mathematics</td>
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<td>Mathematics Learning and Teaching</td>
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<tr>
<td>Mathematics History and Technology</td>
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<tr>
<td>Supervised Demonstration Teaching in Mathematics, Observations 1 and 2</td>
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<td>9</td>
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<tr>
<td>Course Description</td>
<td>CUs</td>
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<tr>
<td>Supervised Demonstration Teaching in Mathematics, Observation 3 and Midterm</td>
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<tr>
<td>Supervised Demonstration Teaching in Mathematics, Observations 4 and 5</td>
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<tr>
<td>Supervised Demonstration Teaching in Mathematics, Observation 6 and Final</td>
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<tr>
<td>Teacher Work Sample in Mathematics</td>
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<tr>
<td>Professional Portfolio</td>
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<tr>
<td>Cohort Seminar</td>
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<td>9</td>
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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 Bachelor of Arts, Mathematics (5-12)

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.

**General Education**

**College Algebra**
This course supports the assessment for College Algebra with Hawkes Learning. College Algebra provides a detailed exploration into basic algebraic concepts and functions and their use in describing, interpreting, and modeling real-world situations.

*This course covers the following competencies:*

- The graduate simplifies and factors polynomial expressions, and solves polynomial equations.
- The graduate combines functions, finds inverse functions, solves exponential and logarithmic equations and functions.
- The graduate simplifies rational, radical, and quadratic expressions, solves corresponding equations, and extends this knowledge to the study of functions.
- The graduate solves systems of linear equations and their related applications.
- The graduate classifies and performs operations on real numbers; solves linear equations and inequalities; connects a linear equation to its graph; and identifies a function.

**English Composition I**
This course introduces learners to the types of writing and thinking that is valued in college and beyond. Students will practice writing in several genres and several media, with emphasis placed on writing and revising academic arguments. The course contains supporting media, articles, and excerpts to support a focus on one of five disciplinary threads (covering the topics of nursing, business, information technology, teaching, and literature, art, and culture) designed to engage students and welcome them into discussion about contemporary issues. The course supports peer review activities, though it may be completed asynchronously as well. Instruction and exercises in grammar, mechanics, research documentation, and style are paired with each module so that writers can practice these skills as necessary. This course includes full access to the MindEdge Writing Pad to support student writing and coaching sessions.

*This course covers the following competencies:*

- The graduate composes an appropriate argumentative essay for a given context.
- The graduate integrates credible and relevant sources into written arguments.
- The graduate uses appropriate writing and revision strategies
- The graduate composes an appropriate narrative for a given context.
- The graduate applies appropriate grammatical rules, sentence structure, and writing conventions.
- The graduate appropriately uses a given writing style.
- The graduate selects appropriate rhetorical strategies that improve writing and argumentation.

**English Composition II**
English Composition II introduces learners to research writing and thinking that are valued in college and beyond. The Composition II course at WGU should be seen as a foundational
course designed to help undergraduate students build fundamental skills for ongoing
development in writing and research. Students will complete an academic research paper.

This course covers the following competencies:

- The graduate applies steps of the writing process appropriately to improve quality of writing.
- The graduate evaluates the quality, credibility, and relevance of evidence in order to integrate evidence into a final research paper.
- The graduate composes an argumentative research paper.

Elements of Effective Communication

Elements of Effective Communication introduces learners to elements of communication that are valued in college and beyond. Materials are based on five principles: being aware of your communication with yourself and others; using and interpreting verbal messages effectively; using and interpreting nonverbal messages effectively; listening and responding thoughtfully to others, and adapting messages to others appropriately.

This course covers the following competencies:

- The graduate applies foundational elements of effective communication.
- The graduate applies appropriate communication strategies in interpersonal and group contexts.
- The graduate demonstrates effective presentational communication strategies in a given context.

Survey of United States History

This course presents a broad and thematic survey of U.S. history from European colonization to the mid-twentieth century. Students will explore how historical events and major themes in American history have affected a diverse population.

This course covers the following competencies:

- The graduate analyzes the colonial experience and the foundations of the American Revolution.
- The graduate analyzes the challenges of partisan politics and sectionalism in the Early Republic and Civil War eras.
- The graduate examines the major changes that defined the United States in the late-nineteenth and early-twentieth centuries.
- The graduate explains significant international and domestic challenges that the United States confronted since World War I.

Introduction to Humanities

This introductory humanities course allows students to practice essential writing, communication, and critical thinking skills necessary to engage in civic and professional interactions as mature, informed adults. Whether through studying literature, visual and performing arts, or philosophy, all humanities courses stress the need to form reasoned, analytical, and articulate responses to cultural and creative works. Studying a wide variety of creative works allows students to more effectively enter the global community with a broad and enlightened perspective.

This course covers the following competencies:

- The graduate analyzes the primary contributions and characteristics of humanities during the Classical period.
- The graduate analyzes the primary contributions and characteristics of humanities during the Realist movement.
- The graduate assesses the development of humans through the study of key concepts, disciplines, and primary influences of the humanities.
- The graduate analyzes the primary contributions and characteristics of humanities during the Romantic period.
- The graduate analyzes the primary contributions and characteristics of humanities during the Renaissance.
- The graduate analyzes the primary contributions and characteristics of humanities within the Neoclassical and
Survey of United States Constitution and Government

In Survey of United States Constitution and Government, you will examine the structure, institutions and principles of the American political system. The foundation of the United States government is the U.S. Constitution, and this course will introduce the concepts of (a) separation of powers, (b) checks and balances, (c) civil liberties and civil rights, and (d) federalism and republicanism.

By completing this course, you will have proven competency in the structures of government, your own role in the policy-making process, and the ways in which the Constitution and government has changed over time.

This course covers the following competencies:

- The graduate analyzes the role of individuals, interest groups, and political parties in the U.S. electoral system.
- The graduate analyzes the division of power between national and state governments.
- The graduate analyzes the development and protection of individual civil liberties and civil rights.
- The graduate analyzes the formation of personal and collective political opinions and the influence of the media.
- The graduate analyzes the central themes and founding principles of the U.S. Constitution and the U.S. government.
- The graduate analyzes the dilemmas and principles of government.
- The graduate analyzes the powers of each branch of government and the relationships among them.

Integrated Natural Science

Integrated Natural Sciences explores the natural world through an integrated perspective and helps students begin to see and draw numerous connections among events in the natural world. Topics include the universe, the Earth, ecosystems and organisms.

This course covers the following competencies:

- The graduate recognizes and applies underlying principles of matter and chemical reactions to analyze the structure, organization, interactions, and processes of organisms.
- The graduate examines fundamental concepts and theories in the natural sciences.
- The graduate analyzes the organization, interactions, and predictable processes of the universe.
- The graduate identifies and analyzes the organization, interactions, and processes of the Earth.
- The graduate recognizes and analyzes various natural phenomena and applies natural science methods and approaches to these natural phenomena.
- The graduate analyzes the components, organization, interactions, and processes of ecosystems.

Integrated Natural Science Applications

Integrated Natural Sciences Applications explores the natural world through an integrated perspective and helps students apply scientific concepts and methodologies to the examination of natural science fundamentals.

This course covers the following competencies:

- The graduate examines fundamental concepts and theories in the natural sciences.
- The graduate recognizes and analyzes various natural phenomena and applies natural science methods and approaches to these natural phenomena.
- The graduate analyzes the components, organization, interactions, and processes of ecosystems.

Teacher Education Foundations
Foundational Perspectives of Education
This course provides an introduction to the historical, legal, and philosophical foundations of education. Current educational trends, reform movements, major federal and state laws, legal and ethical responsibilities, and an overview of standards-based curriculum are the focus of the course. The course of study presents a discussion of changes and challenges in contemporary education. It covers the diversity found in American schools, introduces emerging educational technology trends, and provides an overview of contemporary topics in education.

This course covers the following competencies:

- The graduate analyzes the role of federal and state governance in determining standard educational practices and ensuring access to educational opportunities.
- The graduate evaluates the impact of various educational philosophies on historical and current educational trends.
- The graduate evaluates the affordances and challenges of standards-based curriculum on students, teachers, instruction, and schools.
- The graduate analyzes the relationship of current trends in education and educational reform to historical foundations and evolution of the industry.
- The graduate evaluates the impact of various social issues and influences on students, teachers, instruction, and schools.

Fundamentals of Educational Psychology
Students will learn the major theories of typical and atypical physical, social, cognitive, and moral development of children and adolescents. Information processing, brain research, memory, and metacognition will also be covered.

This course covers the following competencies:

- The graduate analyzes the various influences and contexts that inform students’ individual approaches to learning.
- The graduate recommends strategies for supporting the needs of students with typical and atypical development.
- The graduate analyzes the relationships among motivation, engagement, and cognition as they pertain to the design and selection of instructional materials and approaches.
- The graduate analyzes the relationships between cognition and metacognition as they pertain to the construction of knowledge, thinking skills, and problem-solving strategies.
- The graduate evaluates the appropriateness and effectiveness of various technology tools in supporting development and learning.
- The graduate analyzes contemporary and emerging research on the development and learning of individuals.
- The graduate analyzes how classic theories of development and learning can be applied in an educational situation.

Classroom Management, Engagement, and Motivation
Students will learn the foundations for effective classroom management as well as strategies for creating a safe, positive learning environment for all learners. Students will be introduced to systems that promote student self-awareness, self-management, self-efficacy, and self-esteem.

This course covers the following competencies:

- The graduate generates appropriate instructional interventions for a variety of students and learning contexts.
- The graduate designs emotionally safe classroom environments that foster learning and deal effectively with emotions, conflicts, and serious behavior problems.
- The graduate integrates strategies for managing routine misbehaviors into classroom management strategies and procedures.
• The graduate analyzes classroom management strategies and approaches that promote student self-awareness, self-management, self-efficacy, and self-esteem.

• The graduate incorporates evidence-based strategies and materials in the design of classroom management plans.

• The graduate analyzes major strategies of classroom management as they apply to specific areas of specialization.

• The graduate evaluates best practices that encourage positive social interaction, self-motivation, and active engagement in learning environments.

• The graduate appropriately uses technology to enhance teaching, learning, engagement, and motivation.

Educational Assessment
Educational Assessment assists students in making appropriate data-driven instructional decisions by exploring key concepts relevant to the administration, scoring, and interpretation of classroom assessments. Topics include ethical assessment practices, designing assessments, aligning assessments, and utilizing technology for assessment.

This course covers the following competencies:

• The graduate applies effective methods and strategies in the planning, development, and evaluation of student assessment.

• The graduate effectively and appropriately communicates the results of assessments with stakeholders, including students.

• The graduate evaluates assessment results to make informed educational recommendations, including those for program and school improvement.

• The graduate analyzes assessment information to inform instructional decision-making and to support and adapt instruction for all students, including those individuals with exceptional learning needs.

• The graduate recommends effective strategies for ensuring the responsible and ethical assessment of students.

• The graduate plans and designs assessments aligned to learning outcomes, standards, benchmarks, and objectives.

Mathematics Content

Pre-Calculus
Welcome to studies in complex numbers and trigonometry! In this course you will learn about the complex number system, trigonometric functions, and trigonometric equations.

This course covers the following competencies:

• The graduate solves trigonometric equations and problems and proves trigonometric identities.

• The graduate understands and applies the principles of trigonometry, identifies important characteristics of trigonometric functions, and graphs them.

• The graduate applies various representations of complex numbers to solve problems.

• The graduate uses systems of equations, systems of inequalities, and matrices to model and solve real-life problems.

• The graduate proves trigonometric identities and solves trigonometric equations.

• The graduate applies trigonometric ratios and triangle formulas to model and solve real-life problems.

• The graduate explores arithmetic and geometric sequences and uses them to model and solve real-life problems.

• The graduate uses a unit circle to define trigonometric functions and applies these functions to model and solve real-life problems.

• The graduate demonstrates algebraic, geometric, and polar understanding of the complex number system, and demonstrates computational proficiency with the complex number system.
**College Geometry**

This course is designed for prospective secondary school mathematics teachers. It uses both synthetic and analytic approaches.

In this course, you will be introduced to formal proofs using geometric properties, and have the opportunity to explore basic concepts of transformational geometry. You will also become familiar with the use of dynamic technologies and selected advanced topics in the study of geometry.

This course covers the following competencies:

- The graduate applies synthetic and analytic methods to construct proofs and solves problems involving the properties and relationships of two-dimensional objects.
- The graduate applies geometric transformations to explore and analyze objects and solve problems.
- The graduate applies the axiomatic nature of geometry to analyze the fundamental concepts and principles of Euclidean and non-Euclidean geometries.
- The graduate proves theorems involving congruence and similarity of geometric objects and applies them to solve problems.

**Probability and Statistics I**

This course is designed to provide you with a broad overview of the field of probability and statistics, and a fundamental understanding of statistical reasoning.

This course covers the following competencies:

- The graduate determines the probability of events using simulations, diagrams, and probability rules.
- The graduate designs and conducts observational studies, controlled experiments, and surveys to explore population characteristics.
- The graduate evaluates the sampling methods used in studies including the effect they have on conclusions that can be made.
- The graduate evaluates the relationship between two variables through the creation and interpretation of numerical summaries and visual displays.

**Probability and Statistics II**

This course is designed to provide students with a broad overview of the field of probability and statistics and a fundamental understanding of statistical reasoning. Topics include discrete and continuous random variables, point and interval estimation, and hypothesis testing.

This course covers the following competencies:

- The graduate uses sampling distributions and the Central Limit Theorem to identify unusual samples and solve problems.
- The graduate estimates population parameters using point estimates, confidence intervals, and an understanding of the factors that influence the accuracy and precision of estimates.
- The graduate analyzes probability distributions of discrete and continuous random variables to determine probabilities and solve expected value problems.
- The graduate applies the logic and process of hypothesis testing to evaluate claims about populations.

**Calculus I**

Calculus I explores the key concepts, methods, and applications of differential calculus of one variable. It is the first course in the calculus sequence intended for secondary mathematics teachers. A solid background in precalculus is highly recommended. Topics include a review of functions, limits, derivatives, and applications of differential calculus. Upon
completion, students will be able to apply the concepts and methods of differential calculus and appropriate technology to solve practical problems and communicate results.

This course covers the following competencies:

- The graduate demonstrates a conceptual understanding of limits and continuity and solves problems involving limits and continuity.
- The graduate applies concepts and techniques of differentiation to solve application problems.
- The graduate demonstrates a conceptual understanding of the derivative and finds the derivative of functions.

Calculus II

In Calculus II you will study another important problem that led to the development of calculus: finding the area under a curve. You will study this problem and other applications of integration as you progress through this course. As you do, keep in mind that calculus is not only a theoretical branch of mathematics; calculus is used by scientists, engineers, and economists and has numerous applications to daily life.

This course covers the following competencies:

- The graduate demonstrates a conceptual understanding of integration techniques and correctly applies them.
- The graduate demonstrates a conceptual understanding of sequences.
- The graduate applies integration in various ways in order to solve problems, including differential equations.

Calculus III and Analysis

Calculus III extends your calculus knowledge and ability to solve problems into three dimensions. This branch of mathematics was developed as a way to describe, analyze, and predict the paths, velocity, and acceleration of bodies in 3-D space. Ultimately, these tools allowed Kepler to devise his laws of planetary motion based on Newton’s laws of gravity and motion. In this course you, too, will learn the skills needed to comprehend such real-world phenomena. You will also learn to analyze surfaces and solids and tackle infinite sequences and series.

This course covers the following competencies:

- The graduate demonstrates understanding of functions of more than one variable and applies that knowledge to solve problems.
- The graduate demonstrates understanding of vectors and fluency with vector operations and applications.
- The graduate demonstrates understanding of the properties of series and their applications and determines the convergence of series.

Linear Algebra

This course supports the assessment for Linear Algebra and addresses systems of equations, matrix operations and characteristics, vector spaces, and linear transformations. While this course has some similarity to the basic algebra of real numbers that you learned in the past, it is a bit different because it moves up into problem solving in higher dimensions. Learning linear algebra will reinforce the importance of the principles and concepts of the algebra you already know.

This course covers the following competencies:

- The graduate applies matrix theory and matrix algebra to model and solve problems.
- The graduate demonstrates understanding of linear transformations and their applications.
- The graduate demonstrates understanding of the properties and characteristics of vector spaces.

Mathematics: Content Knowledge

This course is designed to help you refine and integrate the mathematics content knowledge and skills necessary to become a successful secondary mathematics teacher. Successful completion of the course requires a high-level of
This course covers the following competencies:

- The graduate demonstrates a conceptual understanding of limits and finds limits of functions.
- The graduate solves trigonometric equations and problems and proves trigonometric identities.
- The graduate understands and applies the principles of trigonometry, identifies important characteristics of trigonometric functions, and graphs them.
- The graduate applies differentiation in various ways to solve problems.
- The graduate applies matrix theory and matrix algebra to model and solve problems.
- The graduate determines the probability of events using simulations, diagrams, and probability rules.
- The graduate demonstrates an understanding of important number theory principles, their applications, and proofs.
- The graduate designs and conducts observational studies, controlled experiments, and surveys to explore population characteristics.
- The graduate applies synthetic and analytic methods to construct proofs and solves problems involving the properties and relationships of two-dimensional objects.
- The graduate demonstrates a conceptual understanding of and solves problems involving continuity, and defines the relationship of continuity to differentiability and integrability.
- The graduate applies geometric transformations to explore and analyze objects and solve problems.
- The graduate evaluates the sampling methods used in studies including the effect they have on conclusions that can be made.
- The graduate analyzes probability distributions of discrete and continuous random variables to determine probabilities and solve expected value problems.
- The graduate demonstrates understanding of vectors and fluency with vector operations and applications.
- The graduate demonstrates a conceptual understanding of integration techniques and correctly applies them.
- The graduate demonstrates a conceptual understanding of sequences.
- The graduate applies the axiomatic nature of geometry to analyze the fundamental concepts and principles of Euclidean and non-Euclidean geometries.
- The graduate demonstrates understanding of the properties of series and their applications and determines the convergence of series.
- The graduate evaluates the relationship between two variables through the creation and interpretation of numerical summaries and visual displays.
- The graduate demonstrates a conceptual understanding of differentiation and applies differentiation techniques to solve problems and aid in function graphing.
- The graduate applies the logic and process of hypothesis testing to evaluate claims about populations.
- The graduate applies integration in various ways in order to solve problems, including differential equations.
- The graduate proves theorems involving congruence and similarity of geometric objects and applies them to solve problems.
- The graduate demonstrates algebraic, geometric, and polar understanding of the complex number system, and demonstrates computational proficiency with the complex number system.

Abstract Algebra

Abstract algebra introduces you to new structures: groups, rings, and fields that are the foundation of the arithmetic you use every day. This course will give you a deeper understanding of the concepts that you will teach to your students, thus making you a better teacher.
This course covers the following competencies:

- The graduate demonstrates an understanding of important number theory principles, their applications, and proofs.
- The graduate analyzes the characteristics of and proves theorems involving groups.
- The graduate demonstrates understanding of the characteristics of and proves theorems involving rings.
- The graduate demonstrates understanding of the characteristics of and proves theorems involving fields and subfields.

Teacher Education Diversity

Fundamentals of Diversity, Inclusion, and Exceptional Learners

Students will learn the history of inclusion and develop practical strategies for modifying instruction, in accordance with legal expectations, to meet the needs of a diverse population of learners. This population includes learners with disabilities, gifted and talented learners, culturally diverse learners, and English language learners.

This course covers the following competencies:

- The graduate recommends best practices to plan classroom instruction in a supportive learning environment for ELL students.
- The graduate selects appropriate strategies to effectively and ethically engage with students, families, administrators, and other stakeholders in support of the education of diverse learners.
- The graduate applies appropriate policies, programs, accepted practices, and legal requirements to classroom and instructional practices as they relate to special education, English language learners, and gifted and talented learners.
- The graduate selects appropriate behavioral intervention strategies for students with special educational needs.
- The graduate selects effective and appropriate learning opportunities for the specific needs of diverse learners.
- The graduate selects appropriate technology tools and accommodations to support the education of diverse learners.
- The graduate integrates knowledge of characteristics, contexts, and conditions of students in the process to address the needs of multicultural learners, exceptional learners, atypical development, English language learners, and gifted and talented learners and to implement equity pedagogy into their practice.
- The graduate selects research-based and data-driven assessment strategies that meet the needs of diverse learners.

Pre-Clinical Experiences

Introduction to Preclinical Experiences

Introduction to Preclinical Experiences engages students in utilizing video observations to reflect on a wide range of educational considerations so that they can develop the tools necessary to be prepared in the classroom. Students will document and reflect on at least 40 hours of video observation.

This course covers the following competencies:

- The graduate analyzes the use of standards, state and federal regulations, and educational policy for classroom teaching and learning.
- The graduate analyzes the effectiveness of instructional practices intended to address atypical development and exceptional learning.
- The graduate analyzes the theoretical and practical implications of various instructional practices intended to support classroom management, engagement, and motivation.
- The graduate analyzes the legal and ethical responsibilities of teachers in the classroom.
- The graduate analyzes observed professional practices in relation to a personal teaching philosophy.
● The graduate analyzes how various professional practices intended to support learners relate to theories of learning and development.

● The graduate analyzes the theoretical and practical implications of various instructional strategies and models intended to support teaching and learning.

● The graduate evaluates various uses of academic language and classroom discourse to determine possible theoretical and practical implications for instructional practice and student learning.

● The graduate analyzes the theoretical and practical implications of various instructional practices intended to support equity and the teaching of diverse learners.

Pre-Clinical Experiences in Mathematics
Pre-Clinical Experiences in Mathematics provides students the opportunity to observe and participate in a wide range of in-classroom teaching experiences in order to develop the skills and confidence necessary to be an effective teacher. Students will reflect on and document at least 60 hours of in-classroom observations. Prior to entering the classroom for the observations, students will be required to meet several requirements including a cleared background check, passing scores on the state or WGU required basic skills exam, a completed resume, philosophy of teaching, and professional photo.

Instructional Planning and Presentation

Introduction to Instructional Planning and Presentation
Students will develop a basic understanding of effective instructional principles and how to differentiate instruction in order to elicit powerful teaching in the classroom.

This course covers the following competencies:

● The graduate evaluates various influences on learning and instruction to ensure positive and engaging learning experiences.

● The graduate applies research-based and evidence-based instructional design and presentation principles in the evaluation of effective unit and lesson plans.

● The graduate incorporates best principles and practices into the design of learning outcomes.

● The graduate analyzes the relationships among technology, pedagogy, instruction, and learning.

● The graduate analyzes the role of assessment in the cycle of instruction.

● The graduate evaluates appropriate and effective learning resources that support student learning.

● The graduate selects appropriate and effective tools for communicating with students, colleagues, families, and others to support and facilitate student success and achievement.

● The graduate applies strategies to develop academic language through learning and instruction.

● The graduate selects appropriate and effective instructional strategies to support the full range of learners.

Instructional Planning and Presentation in Mathematics
Students will continue to build instructional planning skills with a focus on selecting appropriate materials for diverse learners, selecting age- and ability- appropriate strategies for the content areas, promoting critical thinking, and establishing both short- and long- term goals.

This course covers the following competencies:

● The graduate plans safe and engaging learning environments that foster cultural and community understanding, collaboration, student voice, positive social interactions, and that include individuals with exceptional learning needs.

● The graduate incorporates various grouping strategies into instruction to facilitate learning for all students.
• The graduate effectively and appropriately uses data, including assessment results, in the planning, delivery, and evaluation of meaningful, relevant, and engaging instruction.

• The graduate uses technology appropriately in the planning and delivery of meaningful, relevant, and engaging instruction.

• The graduate integrates appropriate and effective presentation strategies in the planning or delivery of lessons for a variety of learners.

• The graduate develops instructional materials that effectively incorporate prior learning and cross-curricular learning outcomes to promote relevant, meaningful, and engaging instruction.

• The graduate integrates research derived from evidence-based practice into the planning and delivery of meaningful, relevant, and engaging instruction and assessment.

• The graduate develops active learning opportunities for a variety of students to promote meaningful, relevant, and engaging student-focused instruction.

• The graduate effectively evaluates and integrates standards, learning outcomes, assessment, instructional strategies, and learning resources in the development and modification of unit and lesson plans.

Mathematics Education

Mathematics Learning and Teaching
In this course you will develop the knowledge and skills necessary for becoming a prospective and practicing educator. You will be able to use a variety of instructional strategies to effectively facilitate the learning of mathematics. The focus will be on selecting appropriate resources, using multiple strategies, and instructional planning. Methods will be based on research and problem solving. A deep understanding of the knowledge, skills, and disposition of mathematics pedagogy is necessary to become an effective secondary mathematics educator.

This course covers the following competencies:

• The graduate uses multiple assessment strategies to evaluate student understanding and guide instruction.

• The graduate accommodates the needs and abilities of diverse students in the planning of learning activities.

• The graduate evaluates teaching tools and strategies for the purpose of planning learning activities.

• The graduate integrates problem solving into learning activities to build conceptual understanding.

• The graduate evaluates learning activities for alignment with the National Council of Teachers of Mathematics (NCTM) standards.

• The graduate integrates principles and models of teaching for understanding into learning activities.

• The graduate incorporates standards and best practices for the teaching and learning of mathematics for all students into instructional practice.

Mathematics History and Technology
In this course, you will learn about a variety of technological tools for doing mathematics, and you will develop a broad understanding of the historical development of mathematics. More importantly, you will learn to evaluate and apply technology and history in order to create a student-centered mathematical learning environment.

This course covers the following competencies:

• The graduate utilizes appropriate industry-standard technological tools to solve problems.

• The graduate analyzes the humanistic, social, and political influences on mathematical discoveries and the applications and effect of those discoveries.

• The graduate analyzes the historical development of methods in mathematics.

• The graduate evaluates technological tools for appropriate use in a variety of situations.
• The graduate analyzes major historical developments and cultural contributions in number systems, algebra, geometry, calculus, discrete mathematics, statistics and probability, and measurement.

• The graduate integrates mathematics history into the planning of learning activities to improve student learning.

• The graduate integrates student-centered technology in the planning of learning activities to build understanding of mathematical concepts and promote creativity.

Demonstration Teaching

Supervised Demonstration Teaching in Mathematics, Observations 1 and 2
Supervised Demonstration Teaching in Mathematics involves a series of classroom performance observations by the host teacher and clinical supervisor that develop comprehensive performance data about the teacher candidate’s skills.

Supervised Demonstration Teaching in Mathematics, Observation 3 and Midterm
Supervised Demonstration Teaching in Mathematics involves a series of classroom performance observations by the host teacher and clinical supervisor that develop comprehensive performance data about the teacher candidate’s skills.

Supervised Demonstration Teaching in Mathematics, Observations 4 and 5
Supervised Demonstration Teaching in Mathematics involves a series of classroom performance observations by the host teacher and clinical supervisor that develop comprehensive performance data about the teacher candidate’s skills.

Supervised Demonstration Teaching in Mathematics, Observation 6 and Final
Supervised Demonstration Teaching in Mathematics involves a series of classroom performance observations by the host teacher and clinical supervisor that develop comprehensive performance data about the teacher candidate’s skills.

Teacher Work Sample in Mathematics
The Teacher Work Sample is a culmination of the wide variety of skills learned during your time in the Teachers College at WGU. In order to be a competent and independent classroom teacher, you will showcase a collection of your content, planning, instructional, and reflective skills in this professional assessment.

This course covers the following competencies:
• The graduate applies instructional strategies that promote learning, engage students, and provide differentiated instruction.

• The graduate evaluates the teaching context to accommodate student differences to plan for instruction and assessment.

• The graduate plans comprehensive learning segments of instruction and assessment that align with standards and the needs of students.

• The graduate integrates strategies to develop academic language that facilitates effective student participation and engagement in learning.

• The graduate evaluates teaching experiences including the planning and implementing of curriculum and instruction through ongoing reflection.

• The graduate utilizes assessment data to profile student learning, communicate information about student progress and achievement, and guide and modify instruction.

• The graduate plans learning environments that support individual learning, collaboration, and positive social interaction.

Professional Portfolio
You will create an online teaching portfolio that includes professional artifacts (e.g., resume and Philosophy of Teaching Statement) that demonstrate the skills you have acquired throughout your Demonstration Teaching experience.

This course covers the following competencies:

- The graduate recommends improvements for instruction and professional practice through personal reflection.
- The graduate develops appropriate plans for professional growth in subject matter knowledge and pedagogical skills, including habits and skills of continual inquiry and learning.
- The graduate demonstrates ethical responsibilities and appropriate teaching dispositions, including those outlined in the Western Governors University Teachers College Code of Ethics.

Cohort Seminar

Cohort Seminar provides mentoring and supports teacher candidates during their demonstration teaching period by providing weekly collaboration and instruction related to the demonstration teaching experience. It facilitates their demonstration of competence in becoming reflective practitioners, adhering to ethical standards, practicing inclusion in a diverse classroom, exploring community resources, building collegial and collaborative relationships with teachers, and considering leadership and supervisory skills.

This course covers the following competencies:

- The graduate demonstrates the ability to positively impact student learning through work samples, student artifacts, assessment results, and reflection.
- The graduate recommends improvements for instruction and professional practice through personal reflection.
- The graduate selects community resources that support students’ non-instructional needs in and out of the classroom.
- The graduate develops appropriate plans for professional growth in subject matter knowledge and pedagogical skills, including habits and skills of continual inquiry and learning.
- The graduate recommends various strategies to differentiate instruction to meet the diverse needs of individual students.
- The graduate recommends strategies that support the development of academic language for all students.
- The graduate recommends strategies for effectively collaborating with colleagues, parents, and community professionals to support student development, learning, and well being.
- The graduate recommends effective strategies to maintain high levels of student engagement.
- The graduate recommends best practices for classroom management, effective transitions, and pacing to maximize instructional time.
- The graduate demonstrates ethical responsibilities and appropriate teaching dispositions, including those outlined in the Western Governors University Teachers College Code of Ethics.
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., and Sunday from 10:00 a.m. to 7:00 p.m., mountain standard time.

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.

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