This course supports the assessments for Mathematics: Content Knowledge. The course covers 24 competencies and represents 6 competency units.

**Introduction**

**Course Overview**

Mathematics: Content Knowledge is designed to help students refine and integrate the mathematics content knowledge and skills necessary to become a successful secondary mathematics teacher. A high level of mathematical reasoning skills and the ability to solve problems are necessary to complete this course. Prerequisites for this course are College Geometry, Probability and Statistics I, and Pre-Calculus.

**Getting Started**

Welcome to Mathematics: Content Knowledge! The course materials have been designed and selected by the Course Mentor team to effectively prepare you for the Praxis Subject Assessment. To get started, click the "Launch Course" button and review the information presented.

**Teaching Dispositions Statement**

Please review the [Statement of Teaching Dispositions](#).

**Preparing for Success**

The information in this section is provided to detail the resources available for you to use as you complete this course.

**Learning Resources**

**Practice Exams**

Follow the instructions within the course to check your readiness with practice exams. The following instructions explain how to access these practice exams.

**Exam Edge**

Exam Edge provides full-length practice exams designed specifically to help students prepare for the Mathematics: Content Knowledge (5161) exam. These practice exams include a review page that contains detailed step-by-step explanations for each question in the exam. You may access the following tests at [Exam Edge for Mathematics: Content Knowledge](#):

- free Practice Test
Practice Tests 1-3 (already paid for by WGU)
additional tests available for purchase (not recommended for most students)

ETS Practice Exam
You will enroll in the official Practice Exam by ETS. Once you have enrolled, you will be able to take the practice exam up to 10 times or 90 days, whichever comes first: wait to enroll until you have completed the recommended review tasks and Exam Edge practice tests. The questions on this practice test do not change, so take this first attempt seriously. To enroll, navigate to the "Learning Resources" tab, click the "Sections" button, and then click the "Enroll Now" button. Once your mentor approves your enrollment in the resource, you will receive an e-mail with further access instructions. Contact your course mentor if you have questions.

Launch Your Course
When you are ready to begin the course, click the "Launch Course" button:
Launch Course

Assessment Information
Payment
WGU will pay for your first two attempts at the Praxis Subject Assessment Mathematics: Content Knowledge (5161) exam. You will be responsible for paying third and subsequent attempts. WGU will not pay for extended or emergency registration, so be sure to plan ahead when scheduling the exam (schedule at least four weeks in advance). Please see the Test and Service Fees Web page for detailed information on registering and test and service fees.

Scheduling
The Praxis Subject Assessment Mathematics: Content Knowledge (5161) exam is only offered as a computer-delivered test. Please visit the Computer-delivered Test Centers and Dates Web page for a list of available sites and testing windows. These tests are offered only during certain time frames and not all test centers are open on all test dates, so plan accordingly (schedule at least four weeks in advance).

Once you have selected a testing center and date, use the directions on the Accessing Objective and Outside Vendor Assessments Web page to schedule your exam.

Note: You must schedule your Praxis exam through WGU in order to have WGU pay for the exam.

Submit Your Score
You will need to submit your scores to WGU after completing this exam. Once you have submitted your passing score, you will receive a "Pass" on your Degree Plan for the assessment. After
completing an outside vendor assessment, follow the directions for submitting a score report on the Following Outside Vendor Assessments Web page.

Competencies

This course provides guidance to help you demonstrate the following competencies:

- **Competency 209.3.1: Complex Number System**
  The graduate demonstrates algebraic, geometric, and polar understanding of the complex number system, and demonstrates computational proficiency with the complex number system.

- **Competency 209.3.2: Trigonometric Functions**
  The graduate understands and applies the principles of trigonometry, identifies important characteristics of trigonometric functions, and graphs them.

- **Competency 209.3.3: Trigonometric Equations & Identities**
  The graduate solves trigonometric equations and problems and proves trigonometric identities.

- **Competency 209.6.2: Limits**
  The graduate demonstrates a conceptual understanding of limits and finds limits of functions.

- **Competency 209.6.3: Continuity**
  The graduate demonstrates a conceptual understanding of continuity and solves problems involving continuity, and defines the relationship of continuity to differentiability and integrality.

- **Competency 209.6.4: Differentiation**
  The graduate demonstrates a conceptual understanding of differentiation and applies differentiation techniques to solve problems and aid in function graphing.

- **Competency 209.6.5: Applied Differentiation**
  The graduate applies differentiation in various ways to solve problems.

- **Competency 209.7.1: Integration**
  The graduate demonstrates a conceptual understanding of integration techniques and correctly applies them.

- **Competency 209.7.2: Applied Integration**
  The graduate applies integration in various ways in order to solve problems, including differential equations.

- **Competency 209.7.3: Sequences**
  The graduate demonstrates a conceptual understanding of sequences.

- **Competency 209.8.6: Matrices:**
  The graduate applies matrix theory and matrix algebra to model and solve problems.

- **Competency 210.2.1: Vectors**
  The graduate demonstrates understanding of vectors and fluency with vector operations and applications.

- **Competency 210.2.4: Infinite Series**
  The graduate demonstrates understanding of the properties of series and their applications and determines the convergence of series.
• **Competency 210.4.1: Number Theory**
The graduate demonstrates an understanding of important number theory principles, their applications, and proofs.

• **Competency 214.1.2: Examining Relationships**
The graduate evaluates the relationship between two variables through the creation and interpretation of numerical summaries and visual displays.

• **Competency 214.1.3: Sampling Methods**
The graduate evaluates the sampling methods used in studies including the effect they have on conclusions that can be made.

• **Competency 214.1.4: Designing Studies**
The graduate designs and conducts observational studies, controlled experiments, and surveys to explore population characteristics.

• **Competency 214.1.6: Determining Probability**
The graduate determines the probability of events using simulations, diagrams, and probability rules.

• **Competency 215.1.1: Random Variables**
The graduate analyzes probability distributions of discrete and continuous random variables to determine probabilities and solve expected value problems.

• **Competency 215.1.4: Hypothesis Testing**
The graduate applies the logic and process of hypothesis testing to evaluate claims about populations.

• **Competency 218.1.1: Axiomatic Systems**
The graduate applies the axiomatic nature of geometry to analyze the fundamental concepts and principles of Euclidean and non-Euclidean geometries.

• **Competency 218.1.2: Properties and Relationships**
The graduate applies synthetic and analytic methods to construct proofs and solves problems involving the properties and relationships of two-dimensional objects.

• **Competency 218.1.3: Congruence and Similarity**
The graduate proves theorems involving congruence and similarity of geometric objects and applies them to solve problems.

• **Competency 218.1.6: Geometric Transformations**
The graduate applies geometric transformations to explore and analyze objects and solve problems.

### Accessibility Policy

Western Governors University recognizes and fulfills its obligations under the Americans with Disabilities Act of 1990 (ADA), the Rehabilitation Act of 1973 and similar state laws. Western Governors University is committed to provide reasonable accommodation(s) to qualified disabled learners in University programs and activities as is required by applicable law(s). The Office of Student Accessibility Services serves as the principal point of contact for students seeking accommodations and can be contacted at [ADASupport@wgu.edu](mailto:ADASupport@wgu.edu).
Course Feedback

WGU values your input! Please submit any feedback you have using the following form:

Course Feedback