



This course supports the assessments for Mathematics: Content Knowledge. The course covers 24 competencies.

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 Instructor team to effectively prepare you for the Praxis Subject Assessment Mathematics: Content Knowledge (5161). To get started, click the "Launch Course" button and review the information presented. The information below the launch button will help you when you are ready to take your practice exams and Praxis Subject Assessment exam upon completion of the course study.

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:

Note: Internet Explorer is not recommended for viewing this course content.

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

The [ETS Practice Exam](#) is a full-length practice test that allows you to work through a set of test questions to simulate what you will experience on the actual day of the PRAXIS exam. After a completed attempt, you can view your score and review explanations for the correct answers. You will have unlimited attempts regardless of any notice to the contrary on the ETS website. This practice test includes one set of test questions. Retaking it will not provide different sets of questions or change the order in which they are delivered.

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 for the cost of 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 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.