WESTERN GOVERNORS UNIVERSITY

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Program Guidebook

Bachelor of Arts, Educational Studies in Secondary Mathematics Education

The Bachelor of Arts, Educational Studies in Secondary Mathematics Education (BAESMES),includes content knowledge related to secondary grades mathematics (5-12) teaching. This program consists of online courses which take the learner from general education, through methods of instruction, assessment, and classroom management to mathematics education courses for interacting with secondary grades students. It does not include a supervised teaching practicum in a real classroom and therefore does not meet the requirements for initial teacher licensure. This program is for individuals who, for various reasons, want the academic knowledge that relates to teaching, but who cannot or do not want to participate in a supervised classroom practicum and do not expect to be eligible to teach as a result of completing the program.

Understanding the Competency-Based Approach

Practically speaking, how do competency-based programs like those offered at Western Governors University (WGU) work? Unlike traditional universities, WGU does not award degrees based on completion of a certain number of credit hours or a certain set of required courses. Instead, you will earn your degree by demonstrating your skills, knowledge, and understanding of important concepts.

Progress through a degree program is governed not by the amount of time you spend in class but by your ability to demonstrate mastery of competencies as you complete required courses. Of course, you will need to engage in learning experiences as you review competencies or develop knowledge and skills in areas in which you may be weak. To help you acquire the knowledge and skills you need to complete your courses and program, WGU provides a rich array of learning resources. Your program mentor will work closely with you to help you understand the competencies required for your program and to help you create a schedule for completing your courses. You will also work closely with course instructors as you engage in each of your courses. As subject matter experts, course instructors will guide you through the content you must master to pass the course assessments.

The benefit of this competency-based system is that it enables students who are knowledgeable about a particular subject to make accelerated progress toward completing a 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 already 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), which reaffirmed WGU's accreditation in February 2020. The WGU Teachers College is accredited at the initial-licensure level by the Council for the Accreditation of Educator Preparation (CAEP) and by the Association of Advancing Quality in Educator Preparation (AAQEP) . The nursing programs are accredited by the Commission on Collegiate Nursing Education (CCNE). The Health Information Management program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). The College of Business programs are accredited by the Accreditation Council for Business Schools and Programs (ACBSP).

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 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 need to take an online class or participate in a study module to acquire the knowledge and skills needed to fulfill 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,

pre-assessments are there to help your program mentor form a profile of your prior knowledge and create a personalized Degree Plan.

How You Will Interact with Faculty

At WGU, faculty serve in specialized roles, and they will work with you individually to provide the guidance, instruction, and support you will need to succeed and graduate. As a student, it is important for you to take advantage of this support. It is key to your progress and ultimate success.

Upon your enrollment, you will be assigned a program mentor—an expert in your field of study who will provide you with regular program-level guidance and support from the day you start until the day you graduate. Your program mentor will set up regular telephone appointments (weekly at first) with you, which you will be expected to keep. The mentor will review program competencies with you and work with you to develop a plan and schedule for your coursework. Your program mentor will serve as your main point of contact throughout your program—helping you set weekly study goals, recommending specific learning materials, telling you what to expect in courses, and keeping you motivated. In addition to regular calls, your program mentor is available to help you resolve questions and concerns as they arise.

For many of the courses at WGU, you will be required to complete performance assessments. These include reports, papers, presentations, and projects that let you demonstrate your mastery of the required competencies. A separate group of faculty members, called evaluators, will review your work to determine whether it meets requirements. Evaluators are also subject matter experts in their field of evaluation. If your assessment needs further work before it “passes,” these evaluators, who review your work anonymously, will provide you with instructional feedback to help you meet evaluation standards and allow you to advance.

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 interact with faculty and other students.

The learning resources in each course are specifically designed to support you as you develop competencies in preparation for your assessments. These learning resources may include reading materials, videos, tutorials, cohort opportunities, community discussions, and live discussions that are guided by course instructors who are experts in their field. 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 program 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. WGU undergraduate programs may accept transfer credits or apply a

'Requirement Satisfied' (RS) in some cases. Refer to your specific program transfer guidelines to determine what can be satisfied by previously earned college credits. In most cases, WGU does not accept college transfer credits at the graduate (master's) level. Students entering graduate programs must have their undergraduate degree transcripts verified before being admitted to WGU. In addition to a program's standard course path, there may be additional state-specific 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 program 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 8 competency units each term, and undergraduate students must enroll in at least 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 are 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.

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Standard Path *for* Bachelor of Arts, Educational Studies in Secondary Mathematics Education

Course Description	CUs	Term
Educational Foundations	2	1
College Algebra	4	1
Trigonometry and Precalculus	4	1
Introduction to Humanities	3	1
Educational Psychology and Development of Children and Adolescents	4	2
Introduction to Biology	3	2
Probability and Statistics I	4	2
English Composition I	3	2
The School as a Community of Care	3	3
English Composition II	3	3
Introduction to Communication	3	3
Fundamentals of Diverse Learners	4	3
Managing Engaging Learning Environments	3	4
College Geometry	4	4
Calculus I	4	4
Integrated Physical Sciences	3	4
Natural Science Lab	2	5
Calculus II	4	5
Introduction to Curriculum, Instruction, and Assessment	3	5
Assessing Impact on Student Learning	3	5
Probability and Statistics II	3	6
Survey of United States History	3	6
Calculus III	3	6
Educational Technology for Teaching and Learning	3	6
Mathematical Modeling and Applications	3	7
Linear Algebra	3	7
Secondary Reading Instruction and Interventions	3	7
Secondary Disciplinary Literacy	3	7
Abstract Algebra	3	8
Advanced Calculus	3	8
Mathematics Learning and Teaching	4	8
Algebra for Secondary Mathematics Teaching	3	8
Geometry for Secondary Mathematics Teaching	3	9
Statistics and Probability for Secondary Mathematics Teaching	3	9

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Course Description	CUs	Term
Mathematics History and Technology	4	9

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. When program requirements are updated, students readmitting after withdrawal from the university will be expected to re-enter into the most current catalog version of the program.

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Areas of Study for Bachelor of Arts, Educational Studies in Secondary Mathematics Education

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.

Professional Core

Educational Foundations

Educational Foundations is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. The course provides candidates with early classroom experience where they observe multiple school settings at three different levels of schooling and interview an educator to learn how state standards and various legal and ethical issues affect classrooms today. The course also provides candidates with opportunities to gain foundational knowledge about what it means to be a teacher in the current educational context while exploring their future role within the larger landscape of historical and cultural influences. This course ensures candidates have a firm grasp on important issues affecting educators including state standards-based curriculum, legal and ethical requirements affecting educational opportunities, and professionalism, preparing them for subsequent coursework within the Professional Core and their content area major courses. Five preclinical hours are interwoven throughout this course, and cross-cutting themes of technology and diversity are introduced for further development throughout the candidate's programs.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes the role of historical and cultural influences, including issues of federal and state governance, in determining standard educational practices and ensuring equal access to educational opportunities.*
- *The graduate examines the impact of standards-based curriculum on students and teachers to determine how it supports a school's goals.*
- *The graduate evaluates the application of educational best practices in diverse learning settings to inform teaching practice.*
- *The graduate explores pathways and opportunities for professional development to grow as an educator.*

Educational Psychology and Development of Children and Adolescents

Educational Psychology and Development of Children and Adolescents is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. This course prepares candidates to support classroom practices grounded in research-validated principles from the areas of educational psychology and child/adolescent development. Candidates will be introduced to learning theories that equip them with the knowledge and skills necessary to support the diverse populations of students with whom they will interact. This course addresses theories of human development, spanning early childhood through adolescence, and candidates completing this course will be able to explain and analyze the guiding perspectives on linguistic, physical, cognitive, and social development. This course will also cover appropriate instructional and assessment strategies to support student learning and development. Candidates will engage in four hours of virtual classroom observations related to issues in educational psychology and learner development. Cross-cutting themes of technology and diversity are interwoven for further development. This course is designed to be taken after successful completion of the Educational Foundations course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate describes theories of development across the cognitive, linguistic, social, emotional, and physical areas to understand the needs of students at various developmental levels.*
- *The graduate evaluates the influence of students' developmental characteristics on their learning and evaluates performance to inform instructional decisions.*
- *The graduate recommends instructional strategies that will positively impact learning, based on principles of learning theories.*

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- *The graduate evaluates classroom practices to determine how theories of child and adolescent psychology, learning, and development are applied in the classroom environment.*

The School as a Community of Care

The School as a Community of Care is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. This course prepares candidates to meet the social and emotional needs of learners, taking into account theories and philosophical perspectives on child and adolescent development and learning. Candidates learn to effectively collaborate with parents, families, caregivers, and other community stakeholders in each child's education, to build a strong foundation for academic and personal success. Emphasis is placed on family engagement as candidates gain knowledge of individual, cultural, and community assets that can be used to facilitate learner growth and development, as well as understand mental health and emotional differences among learners that may necessitate leveraging additional resources to support students' wellbeing. Issues of youth mental health, substance abuse, suicide awareness and prevention, and abuse within families will be addressed as will the importance of parent involvement. Candidates will engage in seven hours of preclinical experiences, which include visual observations of learning environments that involve parents and families in their children's' education while supporting the social and emotional learning (SEL) needs of learners and an interview with an educational professional to explore topics related to parent involvement, youth mental health issues, and professional responsibilities to ensure student wellbeing. Additionally, crosscutting themes of technology and diversity are interwoven for further development. This course is designed to be taken after successful completion of the Educational Psychology and Development of Children and Adolescents course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate plans for learning environments that meet all students' cultural, social, and emotional learning needs by incorporating knowledge of individual learners, diverse cultures, and communities.*
- *The graduate develops strategies to address the social and emotional learning (SEL) needs of students, including the incorporation of trauma-informed or restorative instructional practices.*
- *The graduate identifies appropriate resources and processes to support the mental health and emotional well-being of students.*
- *The graduate collaborates with families, caretakers, and the larger community to identify partnerships that facilitate learner growth.*

Fundamentals of Diverse Learners

Fundamentals of Diverse Learners is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. This course prepares candidates to consider and address the wide range of learning needs in the classrooms of today. This course teaches candidates to identify and support the needs of diverse populations of learners, including, for example, students with disabilities (INCLUDING DYSLEXIA), English language learners, and gifted and talented students. Practical strategies for differentiating instruction while creating a safe, inclusive, and culturally responsive learning environment are explored. This course helps candidates develop skills for partnering with parents and advocating for all students, particularly those impacted by provisions of IDEA and Section 504 of the Rehabilitation Act. Multitiered systems of supports are addressed to prepare candidates for their future classrooms as they seek to select appropriate instructional practices and interventions to best serve their students. Candidates will engage in four hours of preclinical experiences that includes a simulated teaching experience in which skills learned can be applied. Cross-cutting themes of technology and diversity are interwoven for further development. This course is designed to be taken after successful completion of the School as a Community of Care course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes the application of policies, practices, and legal requirements to inform teaching practice.*
- *The graduate creates inclusive learning environments featuring multitiered systems of supports to address the needs of all students, including exceptional learners and English learners.*
- *The graduate creates learning experiences that accommodate the needs of students with exceptionalities, including gifted and talented students, in order to facilitate the success of all learners.*
- *The graduate integrates equity pedagogy to address the needs of multicultural learners.*
- *The graduate plans learning experiences that accommodate linguistic diversity to facilitate the success of all learners.*
- *The graduate recommends strategies to engage with students, families, administrators, and other stakeholders in ways*

that are effective, legal, and ethical.

Managing Engaging Learning Environments

Managing Engaging Learning Environments is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. This course prepares candidates to establish and contribute to safe and productive learning environments that support the success of all learners by ensuring student engagement and motivation for learning. Candidates will learn strategies, such as incorporating consistent routines and expectations, to provide positive behavior supports, increase learner motivation, promote active learning and self-direction, and ensure a safe and productive classroom setting that fosters a sense of community through collaborative educational practices. The course will culminate in evidence-based, practical application of current strategies, theories, or philosophical perspectives related to motivating and engaging all students in a learning community. Candidates will engage in seven hours of preclinical experiences that include both virtual observations of classroom settings and time in a simulated classroom environment where theory can be put into practice. Cross-cutting themes of technology and diversity are interwoven for further development. This course is designed to be taken after successful completion of the Fundamentals of Diverse Learners course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate establishes norms and routines to create a safe and productive learning environment that encourages positive social interactions, individual and collaborative learning, and appropriate classroom behaviors.*
- *The graduate interacts with each student in a way that builds positive relationships by using knowledge of individual learners, diverse cultures, and communities.*
- *The graduate analyzes the theoretical foundations and application of classroom management strategies, including behavior support and conflict management, to inform teaching practice.*
- *The graduate recommends strategies that are motivating and encourage active engagement from all students.*

Introduction to Curriculum, Instruction, and Assessment

Introduction to Curriculum, Instruction, and Assessment is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. This course provides candidates with the knowledge and skills necessary to create engaging and standards-aligned lessons that meet the needs of all learners. Candidates will learn to analyze learner needs based on a variety of inputs, including their state P–12 standards, assessment results, and knowledge of learner differences. This course will help candidates design, deliver, and modify instruction in accordance to needs and educational requirements. Candidates will engage in three hours of preclinical experiences that include virtual classroom observations. They also will record a short teaching segment, allowing for authentic teaching experience. Crosscutting themes of technology and diversity are interwoven for continued development. This course is designed to be taken after successful completion of the Managing Engaging Learning Environments course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate aligns lessons to learning goals by synthesizing knowledge about students and their assessment data.*
- *The graduate analyzes the role of various assessment types in evaluating student learning and planning future instruction.*
- *The graduate implements evidence-based instructional strategies to increase content area learning.*
- *The graduate differentiates instruction to facilitate mastery for all learners.*
- *The graduate incorporates cross-disciplinary instruction, skills, and content into lessons.*
- *The graduate creates standards-based instructional plans based on their state's P–12 standards that incorporate knowledge of learners' developmental needs, prior learning, and community and cultural context.*

Assessing Impact on Student Learning

Assessing Impact on Student Learning is a key component of WGU's Professional Core and is a required course for all initial licensure candidates. This course equips candidates to evaluate student learning and their own professional practice, ensuring candidates are prepared to ensure all learners' success. In this course, candidates learn multiple methods of assessment to ensure they are able to implement a balanced approach to assessment while monitoring their students' progress. Assessments types such as formative, summative, standardized, and common assessments are addressed so candidates understand their purposes and can apply them within the context of a lesson to determine impact on learning.

Data literacy skills are taught to ensure candidates interpret and analyze individual and classroom data and apply their knowledge in ways that support academic success. Candidates will engage in three hours of preclinical experiences that include virtual classroom observations. Cross-cutting themes of technology and diversity are interwoven for further development. This course is designed to be taken after successful completion of the Introduction to Curriculum, Instruction, and Assessment course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate plans a progress-monitoring strategy, including formative, summative, and common assessments, that actively engages students in their own learning.*
- *The graduate analyzes assessment results to evaluate student learning and teacher effectiveness.*
- *The graduate makes evidence-based instructional decisions that are informed by student assessment data.*
- *The graduate determines their impact on learners and the broader school community through evaluation of teaching practice.*

Educational Technology for Teaching and Learning

Educational Technology for Teaching and Learning is a key component of WGU's professional core and is a required course for all initial licensure candidates. This course prepares candidates to incorporate technology into their classroom practices in ways that improve teaching and learning. The ISTE standards will form the basis for their practice. The material will teach candidates to critically evaluate software and hardware options that may positively impact the classroom environment, while also increasing their awareness of ethical usage and considerations related to equity, access to technology, and appropriate use of technology by P–12 students. Assistive technologies to meet the needs of a diverse learner population also will be taught in this course. Candidates will engage in three hours of preclinical experience that include virtual observations of classroom practices incorporating technology to support educational goals. Crosscutting themes of technology and diversity are interwoven for further development. This course is designed to be taken after successful completion of the Assessing Impact on Student Learning course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes how research-based applications of technology facilitate student learning.*
- *The graduate evaluates the application of technology in the classroom, including its impact on learning for all students and potential equity or access issues.*
- *The graduate promotes a technology-enabled classroom culture that is equitable, ethical, and socially responsible.*
- *The graduate applies curricular and instructional design principles to create effective digital learning environments.*
- *The graduate recommends technology as an assessment tool to encompass multiple learner needs, provide in the moment feedback, and inform instruction.*
- *The graduate fosters student self-directedness and independent learning through the use of technology.*

General Education

College Algebra

This course provides further application and analysis of algebraic concepts and functions through mathematical modeling of real-world situations. Topics include: real numbers, algebraic expressions, equations and inequalities, graphs and functions, polynomial and rational functions, exponential and logarithmic functions, and systems of linear equations.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *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.*
- *The graduate solves systems of linear equations and their related applications.*
- *The graduate simplifies and factors polynomial expressions, and solves polynomial equations.*

- *The graduate simplifies rational, radical, and quadratic expressions, solves corresponding equations, and extends this knowledge to the study of functions.*
- *The graduate combines functions, finds inverse functions, solves exponential and logarithmic equations and functions.*

Introduction to Humanities

This introductory humanities course allows candidates 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 candidates to more effectively enter the global community with a broad and enlightened perspective.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *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 Classical period.*
- *The graduate analyzes the primary contributions and characteristics of humanities during the Renaissance.*
- *The graduate analyzes the primary contributions and characteristics of humanities during the Neoclassical and Enlightenment period.*
- *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 Realism movement.*

English Composition I

English Composition I introduces candidates to the types of writing and thinking that are valued in college and beyond. Candidates will practice writing in several genres with emphasis placed on writing and revising academic arguments. Instruction and exercises in grammar, mechanics, research documentation, and style are paired with each module so that writers can practice these skills as necessary. Composition I is a foundational course designed to help candidates prepare for success at the college level. There are no prerequisites for English Composition I.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate applies appropriate grammatical rules, sentence structure, and writing conventions.*
- *The graduate selects appropriate rhetorical strategies that improve writing and argumentation.*
- *The graduate appropriately uses a given writing style.*
- *The graduate uses appropriate writing and revision strategies.*
- *The graduate integrates credible and relevant sources into written arguments.*
- *The graduate composes an appropriate narrative for a given context.*
- *The graduate composes an appropriate argumentative essay for a given context.*

English Composition II

English Composition II introduces candidates to the types of research and writing that are valued in college and beyond. Candidates will practice writing, with emphasis placed on research, writing, and revising an academic argument. Instruction and exercises in grammar, mechanics, research documentation, and style are paired with each module so that writers can practice these skills as necessary. Composition II is a foundational course designed to help candidates prepare for success at the college level. Composition I is the prerequisite for Composition II.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate evaluates the quality, credibility, and relevance of evidence in order to integrate evidence into a final*

research paper.

- *The graduate applies steps of the writing process appropriately to improve quality of writing.*
- *The graduate composes an argumentative research paper.*

Introduction to Communication

This introductory communication course allows candidates to become familiar with the fundamental communication theories and practices necessary to engage in healthy professional and personal relationships. Candidates will survey human communication on multiple levels and critically apply the theoretical grounding of the course to interpersonal, intercultural, small group, and public presentational contexts. The course also encourages candidates to consider the influence of language, perception, culture, and media on their daily communicative interactions. In addition to theory, candidates will engage in the application of effective communication skills through systematically preparing and delivering an oral presentation. By practicing these fundamental skills in human communication, candidates become more competent communicators as they develop more flexible, useful, and discriminatory communicative practices in a variety of contexts. Note: There are references within this video to Taskstream. If Taskstream is not part of your student experience, please disregard, and locate your task(s) within your course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate applies foundational elements of effective communication.*
- *The graduate applies appropriate communication strategies in interpersonal and group contexts.*
- *The graduate utilizes appropriate presentational communication strategies in personal and professional settings.*

Integrated Physical Sciences

This course provides students with an overview of the basic principles and unifying ideas of the physical sciences: physics, chemistry, and earth sciences. Course materials focus on scientific reasoning and practical, everyday applications of physical science concepts to help students integrate conceptual knowledge with practical skills.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate describes the nature and process of science.*
- *The graduate examines applications of physics including fundamental concepts such as forces, motion, energy, and waves.*
- *The graduate examines applications of key chemistry concepts including the structure of matter and the behavior and conservation of matter in chemical reactions.*
- *The graduate describes the underlying organization, interactions, and processes within the Earth system including the Earth's structure and atmosphere, and Earth's interactions within the solar system.*

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:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *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.*

Mathematics Content

Trigonometry and Precalculus

Trigonometry and Precalculus covers the knowledge and skills necessary to apply trigonometry, complex numbers, systems of equations, vectors and matrices, sequence and series, and to use appropriate technology to model and solve real-life problems. Topics include degrees; radians and arcs; reference angles and right triangle trigonometry; applying, graphing and transforming trigonometric functions and their inverses; solving trigonometric equations; using and proving trigonometric identities; geometric, rectangular, and polar approaches to complex numbers; DeMoivre's Theorem; systems of linear equations and matrix-vector equations; systems of nonlinear equations; systems of inequalities; and arithmetic and geometric sequences and series. College Algebra is a prerequisite for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate applies trigonometric ratios and triangle formulas 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 proves trigonometric identities and solves trigonometric equations.*
- *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 explores arithmetic and geometric sequences and uses them to model and solve real-life problems.*

Probability and Statistics I

Probability and Statistics I covers the knowledge and skills necessary to apply basic probability, descriptive statistics, and statistical reasoning, and to use appropriate technology to model and solve real-life problems. It provides an introduction to the science of collecting, processing, analyzing, and interpreting data, including representations, constructions and interpretation of graphical displays (e.g., box plots, histograms, cumulative frequency plots, scatter plots). Topics include creating and interpreting numerical summaries and visual displays of data; regression lines and correlation; evaluating sampling methods and their effect on possible conclusions; designing observational studies, controlled experiments, and surveys; and determining probabilities using simulations, diagrams, and probability rules. Candidates should have completed a course in College Algebra before engaging in this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate evaluates the relationship between two variables through the creation and interpretation of numerical summaries and visual displays.*
- *The graduate evaluates the sampling methods used in studies including the effect they have on conclusions that can be made.*
- *The graduate designs and conducts observational studies, controlled experiments, and surveys to explore population characteristics.*
- *The graduate determines the probability of events using simulations, diagrams, and probability rules.*

College Geometry

College Geometry covers the knowledge and skills necessary to use dynamic technology to explore geometry, to use axiomatic reasoning to prove statements about geometry, and to apply geometric models to solve real-life problems. Topics include axiomatic systems, analytic proofs, coordinate geometry, plane and solid Euclidean geometry, non-Euclidean geometries, constructions, transformations, deductive reasoning, and dynamic technology. College Algebra as well as Trigonometry and Precalculus are prerequisites.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate applies algebraic language in representing geometric concepts to solve two-dimensional problems.*
- *The graduate implements geometric construction methods to create objects.*
- *The graduate applies properties and theorems about circles and circle sectors to solve problems.*

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- *The graduate applies geometric properties to solve problems.*
- *The graduate examines geometric relationships to analyze congruence, similarity, transformations, and symmetry.*
- *The graduate analyzes the axiomatic nature of Euclidean and non-Euclidean geometries to reflect on geometric reasoning and formal proof.*

Calculus I

Calculus I is the study of rates of change in relation to the slope of a curve and covers the knowledge and skills necessary to apply differential calculus of one variable and to use appropriate technology to model and solve real-life problems. Topics include functions, limits, continuity, differentiability, visual, analytical, and conceptual approaches to the definition of the derivative, the power, chain, sum, product, and quotient rules applied to polynomial, trigonometric, exponential, and logarithmic functions, implicit differentiation, position, velocity, and acceleration, optimization, related rates, curve sketching, and L'Hopital's Rule. Pre-Calculus is a pre-requisite for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate demonstrates a conceptual understanding of limits and continuity and solves problems involving limits and continuity.*
- *The graduate demonstrates a conceptual understanding of the derivative and finds the derivative of functions.*
- *The graduate applies concepts and techniques of differentiation to solve application problems.*

Calculus II

Calculus II is the study of the accumulation of change in the area under a curve. It covers the knowledge and skills necessary to apply integral calculus of one variable and to use appropriate technology to model and solve real-life problems. Topics include antiderivatives; indefinite integrals; the substitution rule; Riemann sums; the Fundamental Theorem of Calculus; definite integrals; acceleration, velocity, position, and initial values; integration by parts; integration by trigonometric substitution; integration by partial fractions; numerical integration; improper integration; area between curves; volumes and surface areas of revolution; arc length; work; center of mass; separable differential equations; direction fields; growth and decay problems; and sequences. Calculus I is a prerequisite for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate demonstrates a conceptual understanding of integration techniques and correctly applies them.*
- *The graduate applies integration in various ways in order to solve problems, including differential equations.*
- *The graduate demonstrates a conceptual understanding of sequences.*

Probability and Statistics II

Probability and Statistics II covers the knowledge and skills necessary to apply random variables, sampling distributions, estimation, and hypothesis testing, and to use appropriate technology to model and solve real-life problems. It provides tools for the science of analyzing and interpreting data and includes statistical variability and its sources and the role of randomness in statistical inference. Topics include discrete and continuous random variables; expected values; the Central Limit Theorem; the identification of unusual samples; population parameters; point estimates; confidence intervals; influences on accuracy and precision; hypothesis testing; and statistical tests (z mean, z proportion, one sample t, paired t, independent t, ANOVA, chi-squared, and significance of correlation). Calculus II and Probability and Statistics I are prerequisites for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes probability distributions of discrete and continuous random variables to determine probabilities and solve expected value problems.*
- *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 applies the logic and process of hypothesis testing to evaluate claims about populations.*

Calculus III

Calculus III is the study of calculus conducted in three-or-higher-dimensional space. It covers the knowledge and skills necessary to apply calculus of multiple variables while using the appropriate technology to model and solve real-life problems. Topics include: infinite series and convergence tests (integral, comparison, ratio, root, and alternating), power series, taylor polynomials, vectors, lines and planes in three dimensions, dot and cross products, multivariable functions, limits, and continuity, partial derivatives, directional derivatives, gradients, tangent planes, normal lines, and extreme values. Calculus II is a prerequisite for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate demonstrates understanding of vectors and fluency with vector operations and applications.*
- *The graduate demonstrates understanding of functions of more than one variable and applies that knowledge to solve problems.*
- *The graduate demonstrates understanding of the properties of series and their applications and determines the convergence of series.*

Mathematical Modeling and Applications

Mathematical Modeling and Applications applies mathematics, such as differential equations, discrete structures, and statistics to formulate models and solve real-world problems. This course emphasizes improving students' critical thinking to help them understand the process and application of mathematical modeling. Probability and Statistics II and Calculus II are prerequisites.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate formulates mathematical models for real-world situations.*
- *The graduate critiques mathematical models for accuracy of approach relative to the problem.*
- *The graduate refines mathematical models to better correspond to information and to support assumptions that are more realistic.*
- *The graduate applies discrete dynamic systems to solve real-world problems.*
- *The graduate applies continuous dynamic systems to solve real-world problems.*

Linear Algebra

Linear Algebra is the study of the algebra of curve-free functions extended into three- or higher-dimensional space. It covers the knowledge and skills necessary to apply vectors, matrices, matrix theorems, and linear transformations and to use technology to model and solve real-life problems. It also covers properties of and proofs about vector spaces. Topics include linear equations and their matrix-vector representation Ax=b; row reduction; linear transformations and their matrix representations (shear, dilation, rotation, reflection); matrix operations matrix inverses and invertible matrix characterizations; computing determinants; relating determinants to area and volume; and axiomatic and intuitive definitions of vector spaces and subspaces; and proving theorems about them. College Geometry and Calculus II are prerequisites for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate demonstrates understanding of the properties and characteristics of vector spaces.*
- *The graduate demonstrates understanding of linear transformations and their applications.*
- *The graduate applies matrix theory and matrix algebra to model and solve problems.*
- *The graduate applies propositional logic to solve mathematical problems.*

- *The graduate applies predicate logic to solve mathematical problems.*

Abstract Algebra

Geometry for Secondary Mathematics Teaching explores important conceptual underpinnings, common misconceptions, appropriate use of technology, and instructional practices to support and assess the learning of geometry. Secondary teachers in this course will develop a deep understanding of constructions and transformations, congruence and similarity, analytic geometry, solid geometry, conics, trigonometry, and the historical development of content. Calculus I and College Geometry are prerequisites for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *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.*

Advanced Calculus

Advanced Calculus examines rigorous reconsideration and proofs involving calculus. Topics include real-number systems, sequences, limits, continuity, differentiation, and integration. This course emphasizes using critical thinking to analyze the connections between definitions and properties. Calculus III and Linear Algebra are prerequisites.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate writes mathematical proofs with proper mathematical notation and terminology to demonstrate their understanding of accepted mathematical conventions.*
- *The graduate analyzes the real number system using precise definitions and theorems to develop an advanced perspective.*
- *The graduate analyzes limits of sequences using precise definitions and theorems to develop an advanced perspective.*
- *The graduate analyzes functions of one real variable using precise definitions and theorems to develop an advanced perspective.*

General Science Content

Introduction to Biology

This course is a foundational introduction to the biological sciences. The overarching theories of life from biological research are explored as well as the fundamental concepts and principles of the study of living organisms and their interaction with the environment. Key concepts include how living organisms use and produce energy; how life grows, develops, and reproduces; how life responds to the environment to maintain internal stability; and how life evolves and adapts to the environment.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes the characteristics and classifications of living organisms.*
- *The graduate analyzes the basic chemical composition of cells and the basic processes that happen at the cellular level.*
- *The graduate analyzes different types of cells based on their structures and biological functions.*
- *The graduate analyzes the biological basis for and patterns of heredity and gene expression.*
- *The graduate analyzes inter-dependencies of organisms and their environments.*

Natural Science Lab

This course gives you an introduction to using the scientific method and engaging in scientific research to reach conclusions about the natural world. You will design and carry out an experiment to investigate a hypothesis by gathering quantitative data.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate evaluates academic sources for their credibility and relevance to a chosen research topic on a natural world phenomenon.*
- *The graduate accurately executes the process of scientific inquiry through experimentation in the natural world.*
- *The graduate draws conclusions based on academic research and scientific inquiry.*

Pedagogy

Secondary Reading Instruction and Interventions

Secondary Reading Instruction and Interventions explores the comprehensive, student-centered response to intervention (RTI) model used to identify and address the needs of learners in middle school and high school who struggle with reading comprehension and/or information retention. Course content provides educators with effective strategies designed to scaffold instruction and help learners develop increased skill in the following areas: reading, vocabulary, text structures and genres, and logical reasoning related to the academic disciplines. This course is designed to be taken after successful completion of the Introduction to Curriculum, Instruction, and Assessment course OR Introduction to Instructional Planning and Presentation AND Instructional Planning and Presentation in Special Education.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate explains how the Response to Intervention (RTI) approach identifies, monitors, and differentiates instruction to ensure that struggling readers obtain the appropriate support and interventions to improve academic progress.*
- *The graduate develops effective vocabulary instruction to enhance students' reading comprehension in the content areas.*
- *The graduate integrates knowledge of effective comprehension strategies to help students monitor and improve their own comprehension when reading.*
- *The graduate integrates reading strategies that scaffold instruction for students when reading increasingly complex texts.*
- *The graduate integrates reading assessments to make informed instructional and placement decisions.*

Secondary Disciplinary Literacy

Secondary Disciplinary Literacy examines teaching strategies designed to help learners in middle and high school improve upon the literacy skills required to read, write, and think critically while engaging content in different academic disciplines. Themes include exploring how language structures, text features, vocabulary, and context influence reading comprehension across the curriculum. The course highlights strategies and tools designed to help teachers assess the reading comprehension and writing proficiency of learners and provides strategies to support students' reading and writing success in all curriculum areas. This course has no prerequisites.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate distinguishes between the basic strategies used to facilitate comprehension in the content areas and the specialized reading practices needed to comprehend text in a specific discipline.*
- *The graduate integrates discipline-specific literacy instruction to help students understand the text structures, vocabulary, and language knowledge required for specific disciplines.*
- *The graduate plans writing activities that promote understanding of discipline-specific content through the organization, analysis, and synthesis of ideas.*

- *The graduate creates authentic learning tasks and activities that provide students with opportunities to demonstrate discipline specific understandings.*
- *The graduate integrates instructional strategies and materials in disciplinary literacy practices to enhance student understanding within the disciplines.*

Mathematics Education

Mathematics Learning and Teaching

Mathematics Learning and Teaching will help students develop the knowledge and skills necessary to become prospective and practicing educators. Students will be able to use a variety of instructional strategies to effectively facilitate the learning of mathematics. This course focuses on selecting appropriate resources, using multiple strategies, and planning instruction, with methods 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. There are no prerequisites for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate integrates principles and models of teaching for understanding into learning activities.*
- *The graduate integrates problem solving into learning activities to build conceptual understanding.*
- *The graduate evaluates teaching tools and strategies for the purpose of planning learning activities.*
- *The graduate evaluates learning activities for alignment with the National Council of Teachers of Mathematics (NCTM) standards.*
- *The graduate incorporates standards and best practices for the teaching and learning of mathematics for all students into instructional practice.*
- *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.*

Algebra for Secondary Mathematics Teaching

Algebra for Secondary Mathematics Teaching explores important conceptual underpinnings, common student misconceptions and ways of thinking, appropriate use of technology, and instructional practices to support and assess the learning of algebra. Secondary teachers should have an understanding of the following: algebra as an extension of number, operation, and quantity; various ideas of equivalence pertaining to algebraic structures; patterns of change as covariation between quantities; connections between representations (tables, graphs, equations, geometric models, context); and the historical development of content and perspectives from diverse cultures. In particular, this course focuses on deeper understanding of rational numbers, ratios and proportions, meaning and use of variables, functions (e.g., exponential, logarithmic, polynomials, rational, quadratic), and inverses. Calculus I is a prerequisite for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes historical development, perspectives from diverse cultures, and content knowledge to deepen a student's algebraic understanding.*
- *The graduate integrates instructional practices to support and assess students' understanding of algebra.*
- *The graduate integrates technology to support and assess students' learning of algebra.*
- *The graduate analyzes conceptual algebra underpinnings, common misconceptions, and students' ways of thinking to create opportunities to learn.*

Geometry for Secondary Mathematics Teaching

Geometry for Secondary Mathematics Teaching explores important conceptual underpinnings, common misconceptions and students' ways of thinking, appropriate use of technology, and instructional practices to support and assess the learning of geometry. Secondary teachers in this course will develop a deep understanding of constructions and transformations, congruence and similarity, analytic geometry, solid geometry, conics, trigonometry, and the historical development of content. Calculus I and College Geometry are prerequisites for this course.Calculus I and College Geometry are prerequisites for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes historical development, perspectives from diverse cultures, and content knowledge to deepen a student's geometry understanding.*
- *The graduate integrates instructional practices to support and assess students' understanding of geometry.*
- *The graduate integrates technology to support and assess students' learning of geometry.*
- *The graduate analyzes conceptual geometry underpinnings, common misconceptions, and students' ways of thinking to create opportunities to learn.*

Statistics and Probability for Secondary Mathematics Teaching

Statistics and Probability for Secondary Mathematics Teaching explores important conceptual underpinnings, common misconceptions and students' ways of thinking, appropriate use of technology, and instructional practices to support and assess the learning of statistics and probability. Secondary teachers should have a deep understanding of summarizing and representing data, study design and sampling, probability, testing claims and drawing conclusions, and the historical development of content and perspectives from diverse cultures. Calculus I and Probability and Statistics I and II are prerequisites for this course.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes historical development, perspectives from diverse cultures, and content knowledge to deepen a student's statistics and probability understanding.*
- *The graduate integrates instructional practices to support and assess students' understanding of statistics and probability.*
- *The graduate integrates technology to support and assess students' learning of statistics and probability.*
- *The graduate analyzes conceptual statistics and probability underpinnings, common misconceptions, and students' ways of thinking to create opportunities to learn.*

Mathematics History and Technology

In this course, you will learn about a variety of technological tools for doing mathematics, and develop a broad understanding of the historical development of mathematics. You will come to understand that mathematics is a very human subject that comes from the macro-level sweep of cultural and societal change, as well as the micro-level actions of individuals with personal, professional, and philosophical motivations. You will focus on the historical development of mathematics including contributions of significant figures and diverse cultures. Most importantly, you will learn to evaluate and apply technological tools and historical information to create an enriching student-centered mathematical learning environment.

This course covers the following competencies:

- *Begin your course by discussing your course planning tool report with your instructor and creating your personalized course plan together.*
- *The graduate analyzes major historical developments and cultural contributions in number systems, algebra, geometry, calculus, discrete mathematics, statistics and probability, and measurement.*
- *The graduate analyzes the historical development of methods in mathematics.*
- *The graduate analyzes the humanistic, social, and political influences on mathematical discoveries and the applications and effect of those discoveries.*
- *The graduate evaluates technological tools for appropriate use in a variety of situations.*
- *The graduate utilizes appropriate industry-standard technological tools to solve problems.*
- *The graduate integrates student-centered technology in the planning of learning activities to build understanding of mathematical concepts and promote creativity.*
- *The graduate integrates mathematics history into the planning of learning activities to improve student learning.*

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