

Teaching and Learning

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Courses

CAPS-EDUC 5002 Independent Study

Permission of instructor. Permission to enroll given in McMillan 215. Credit to be determined in each case. Maximum 6 credit units. Credit 6 units.
 Typical periods offered: Fall, Spring, Summer

CAPS-EDUC 5004 Educational Psychology

FOR MATL STUDENTS, ONLY. This is a course in psychological concepts relevant to education that is organized around four basic issues: (1) how humans think and learn; (2) how children, adolescents, and adults differ in their cognitive and moral development; (3) the sense in which motivation and intention explain why people act as they do; and (4) how such key human characteristics as intelligence, motivation, and academic achievement can be measured. Offered fall and spring semesters.
 Credit 3 units.
 Typical periods offered: Summer

CAPS-EDUC 5005 Racial Identity and American Popular Music

This course investigates the history of racial identity and American popular music from the mid-18th century to the present day. What can popular music -- a vehicle of entertainment and commercialism, culture and disposability -- tell us about how Americans have experienced and constructed race? How did Blackness and whiteness sonically rub shoulders, even during the heights of segregation? How did Frank Sinatra journey from being a son of Italian immigrants to being an icon of white, American masculinity? Why did Miley Cyrus' twerking cause an uproar? Participants will be trained in listening closely to musical artifacts, and they will be given opportunities to contextualize their own listening history. Our analysis will incorporate methods from the fields of musicology, history, and cultural studies. Student assignments will include reading, listening, writing, and discussion. This course counts toward the American Culture Studies major for day students, and it fulfills the Humanities or Arts distribution requirement for the AMCS MA program. It also fulfills the Writing Intensive requirement for both the Master of Liberal Arts and the Master of Arts in American Culture Studies programs.
 Credit 3 units. UColl: ACF, ACH, GWRT

CAPS-EDUC 5008 Teaching the Process of Scientific Investigation

This course is intended for in-service teachers. Participants will engage in the process of scientific investigation while developing hands-on lessons for their students that support their ability to understand the nature of the scientific process of problem solving. The focus will be on pedagogical strategies that help foster independent investigation

among students. Classroom project is required. Credit variable, maximum 3 units. This course is fully online. Students enrolled in day classes at Washington University should review the policies of their home division on credit earned for online courses.

Credit 3 units.

Typical periods offered: Spring

CAPS-EDUC 5010 Humanitarian Intervention in International Society

One of the more striking features of post-Cold War international society has been the development of a theory and practice of humanitarian intervention. This course explores the background, causes, nature, and limits of these changes. The course is interdisciplinary in nature, combining legal, moral, and political analysis, with an emphasis on the legal question of whether today there is so-called legal right of humanitarian intervention. The course does not assume prior background in international relations. We therefore also spend time introducing a few central concepts and issues in international relations, in order to provide a theoretical framework for our substantive inquiries into humanitarian intervention.
 Credit 3 units.

CAPS-EDUC 5015 Intentional Classroom Planning: A Survey of Theory and Application

For MATL students only. Dynamic classrooms that provide individualized support and authentic opportunities to engage in rigorous content require a teacher to intentionally plan for all aspects of the classroom, whether for classroom community, student investment, family involvement, or high-quality lessons. In this survey course, we strive to address the problem of enactment by combining theories of education, teaching, and learning alongside or in partnership with the application of such theories to the classroom. For each of the topics addressed, students will first seek to understand the educational, socio-political, and psychological evidence informing teachers and instructional strategies. Then, students will be asked to use these theories to inform applied intentional planning outputs for use in their classrooms. Topics covered will include goal-setting and progress monitoring, student motivation and investment, family and community engagement, classroom community and culture, backwards planning, and using data strategically to support and differentiate instruction. Students must have instructor approval to register.
 Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 5020 Advanced Teaching Methods: Elementary - Fall

In this course, students will continue to refine their vision for high quality instruction in an elementary Language Arts and Mathematics classroom. Language Arts: students will build upon their understanding of best practices in elementary literacy by designing the structure for a Balanced Literacy block in their classrooms. These literacy blocks include instructional time devoted to explicit phonics instruction, shared reading, guided reading, read-aloud instruction, and vocabulary instruction. Students will also focus on writing instruction and will implement writing mini-lessons and student conferences in their classrooms. Mathematics: This course will also build on students' understanding of effective mathematics instruction and their knowledge of both direct instruction and inquiry-based approaches to learning. Students will explore effective instructional strategies through the lens of content, with a core focus in Basic Operations (addition, subtraction, multiplication, and division); Geometry, Fractions and Measurement; & Problem-Solving, Algebra, and Graphing. By analyzing instruction through the lens of specific mathematical concepts, students will have the opportunity to design lessons that focus on the connections between mathematical content as well as the standards for mathematical practice. Students must have instructor approval to register.

Credit 1.5 units.
Typical periods offered: Fall

CAPS-EDUC 5025 Advanced Teaching Methods: Secondary English/Language Arts - Fall

In this course, students will continue to refine their vision for high quality English/language arts instruction in a secondary classroom. This course will build upon students' understanding of effective novel studies and writing units by focusing on the fundamentals of close reading, word study, embedded non-fiction, and writing for reading strategies. Sophisticated discussions are also one of the hallmarks of advanced practice in ELA classrooms. Middle and high school students must be able to fluently use academic language and internalize habits of discussion. This course will also focus on the role of discussion in an ELA classrooms, and students will implement multiple discussion formats, including Socratic Seminars and Literature Circles. Students in this course will also revisit the concept of rigor in a secondary ELA classroom by discussing the importance of text selection, studying text attributes and leveling systems, and analyzing the text selections embedded in their school's curriculum. Students must have instructor approval to register.

Credit 1.5 units.
Typical periods offered: Fall

CAPS-EDUC 5030 Advanced Teaching Methods: Secondary Mathematics - Fall

In this course, students will continue to refine their vision for high quality mathematics instruction in a secondary classroom. Students will revisit the fundamental design elements present in inquiry-based lessons, focusing on the development of their students' conceptual understandings. The course will also focus on the importance of computational and procedural fluency, and students will create a backwards plan that allows for daily fluency practice within their classrooms. Moving beyond fundamental lesson planning and assessment structures, students in this course will learn specific strategies to develop and assess students' problem-solving skills and abilities and implement effective discourse in their mathematics classrooms. Students will design instructional activities that allow their students to explore and discuss challenging problems and tasks through structures such as problem-solving seminars and performance-based assessments. Students must have instructor approval to register.

Credit 1.5 units.
Typical periods offered: Fall

CAPS-EDUC 5035 Advanced Teaching Methods: Secondary Science - Fall

In this course, students will continue to refine their vision for high quality science instruction in a secondary classroom. Moving beyond fundamental lesson planning and assessment structures, students in this course will learn specific strategies to develop and assess students' problem-solving skills and abilities and implement effective discourse in their science classrooms. Students will design instructional activities that allow their students to explore and discuss challenging problems and tasks through structures such as problem-solving seminars and performance-based assessments. Students must have instructor approval to register.

Credit 1.5 units.
Typical periods offered: Fall

CAPS-EDUC 5040 Advanced Teaching Methods: Project-Based Learning & Assessment

For MATL students only. This course is designed to strengthen students' pedagogical content knowledge, including an emphasis on authentic assessment design. Students will create cohesive project-based learning units (developed using the Understanding by Design framework) and rigorous assessments that require students to demonstrate mastery of multiple skills and standards. Students will begin the course by completing content-specific work, unbundling and unpacking NGSS performance expectations and evidence statements (science) or Common Core State Standards (math and ELA). Residents will develop criteria for success and create an authentic assessment that serves as evidence for mastery. Finally, residents will create a coherent unit of instruction, centered on rigorous project-based learning and assessment. Residents will learn strategies necessary for guiding student projects, including cooperative learning strategies, facilitating group work, planning and tracking projects, giving feedback, and developing aligned and meaningful rubrics.

Credit 3 units.
Typical periods offered: Summer

CAPS-EDUC 5045 Creating a Teaching Portfolio

This introductory course will provide guidelines and skills for creating and maintaining a record of each student's professional growth as a teacher that reflects his/her philosophy, knowledge, teaching expertise and experience. Students will examine and reflect on their teaching practice as it relates to personal goals as well as state and national standards for teaching excellence. Permission of instructor required. Credit 2 units.

CAPS-EDUC 5050 Advanced Teaching Methods: Elementary - Spring

In this course, students will continue to refine their vision for high quality instruction in an elementary Language Arts and Mathematics classroom. Language Arts: students will build upon their understanding of best practices in elementary literacy by designing the structure for a Balanced Literacy block in their classrooms. These literacy blocks include instructional time devoted to explicit phonics instruction, shared reading, guided reading, read-aloud instruction, and vocabulary instruction. Students will also focus on writing instruction and will implement writing mini-lessons and student conferences in their classrooms. Mathematics: This course will also build on students' understanding of effective mathematics instruction and their knowledge of both direct instruction and inquiry-based approaches to learning. Students will explore effective instructional strategies through the lens of content, with a core focus in Basic Operations (addition, subtraction, multiplication, and division); Geometry, Fractions and Measurement; & Problem-Solving, Algebra, and Graphing. By analyzing instruction through the lens of specific mathematical concepts, students will have the opportunity to design lessons that focus on the connections between mathematical content as well as the standards for mathematical practice. Students must have instructor approval to register.

Credit 1.5 units.
Typical periods offered: Spring

CAPS-EDUC 5055 Advanced Teaching Methods: Secondary English/Language Arts -- Spring

In this course, students will continue to refine their vision for high-quality English/language arts instruction in a secondary classroom. This course will build upon students' understanding of effective novel studies and writing units by focusing on the fundamentals of close reading, word study, embedded non-fiction, and writing for reading strategies. Sophisticated discussions are also one of the hallmarks of advanced practice in ELA classrooms. Middle and high school students

must be able to fluently use academic language and internalize habits of discussion. This course will also focus on the role of discussion in an ELA classroom, and students will implement multiple discussion formats, including Socratic Seminars and Literature Circles. Students in this course will also revisit the concept of rigor in a secondary ELA classroom by discussing the importance of text selection, studying text attributes and leveling systems, and analyzing the text selections embedded in their school's curriculum. Prerequisite: Permission of instructor.

Credit 1.5 units.

Typical periods offered: Spring

CAPS-EDUC 5060 Advanced Teaching Methods: Secondary Mathematics -- Spring

In this course, students will continue to refine their vision for high-quality mathematics instruction in a secondary classroom. Students will revisit the fundamental design elements present in inquiry-based lessons, focusing on the development of their students' conceptual understandings. The course will also focus on the importance of computational and procedural fluency, and students will create a backwards plan that allows for daily fluency practice within their classrooms. Moving beyond fundamental lesson planning and assessment structures, students in this course will learn specific strategies to develop and assess students' problem-solving skills and abilities and to implement effective discourse in their mathematics classrooms. Students will design instructional activities that allow their students to explore and discuss challenging problems and tasks through structures such as problem-solving seminars and performance-based assessments. Prerequisite: Permission of instructor.

Credit 1.5 units.

Typical periods offered: Spring

CAPS-EDUC 5065 Advanced Teaching Methods: Secondary Science -- Spring

In this course, students will continue to refine their vision for high-quality science instruction in a secondary classroom. Moving beyond fundamental lesson planning and assessment structures, students in this course will learn specific strategies to develop and assess students' problem-solving skills and abilities and implement effective discourse in their science classrooms. Students will design instructional activities that allow their students to explore and discuss challenging problems and tasks through structures such as problem-solving seminars and performance-based assessments. Prerequisite: Permission of instructor.

Credit 1.5 units.

Typical periods offered: Spring

CAPS-EDUC 5066 Advanced Teaching Methods: Secondary STEM - Fall

For MATL students, only. This course is one part of a two-semester series. Moving beyond fundamental lesson planning and assessment structures, students in this course will learn specific strategies to develop and assess their students' STEM academic skills and abilities and implement effective discourse in their classrooms. Students will design instructional activities that allow their students to explore and discuss challenging problems and tasks through structures such as problem-solving seminars and performance-based assessments. Students will use a framework to plan and implement instructional practices, and gather evidence to reflect on and analyze key takeaways as a mode for improving their own teaching practice. Students must have instructor approval to register.

Credit 1.5 units.

Typical periods offered: Fall

CAPS-EDUC 5067 Advanced Teaching Methods: Secondary Stem Spring

This course is part of a two-semester series. Moving beyond fundamental lesson planning and assessment structures, students in this course will learn specific strategies to develop and assess their students' STEM academic skills and abilities and implement effective discourse in their classrooms. Students will design instructional activities that allow their students to explore and discuss challenging problems and tasks through structures such as problem-solving seminars and performance-based assessments. Students will use a framework to plan and implement instructional practices, and gather evidence to reflect on and analyze key takeaways as a mode for improving their own teaching practice. Students must have instructor approval to register.

Credit 1.5 units.

Typical periods offered: Spring

CAPS-EDUC 5068 Technology in the Classroom

FOR MATL STUDENTS, ONLY. This course is designed to provide students with strategies for integrating technology into the classroom. Topics include using technology as a communication tool, creating technology-based lessons, engaging students in technology, utilizing assistive technology, and using technology as an organizational tool. Technology for educators challenges students to think about the underlying principles, terms, and concepts of educational technology. Students are introduced to the different methods teachers can use to integrate technology into classroom instruction for varying grade levels and content areas. In this course, students will have the opportunity to interact with digital tools used in today's classrooms. They will be given hands-on experience with technological tools that will improve their instruction and assist their students in meeting learning standards.

Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 5069 Improving Content and Instruction Through Meaningful Assessments

FOR MATL STUDENTS, ONLY. This course will focus on the various forms of assessments and how to create assessments aligned with standards, while also ensuring student growth is measured. The course will offer a variety of topics including: how to produce meaningful assessments; rigor vs. real-world applications and assessment; the similarities and differences in proficiency scales, scoring guides, & rubrics; how to assess when differentiating lessons; equity in assessments for students, including students with special needs, alternative assessments, and student empowerment in assessments; the purpose and importance of written feedback; performance based assessment; and using pre-post assessments to direct teaching. An understanding of how these topics are synthesized to create a coherent assessment system designed to gather evidence of student learning and provide guidance on how to instructionally respond will be developed. This system includes summative, formative, and self-assessment, as well as both formal and informal approaches to assessment.

Credit 3 units.

Typical periods offered: Fall, Summer

CAPS-EDUC 5070 MATL Capstone Seminar I

The first semester of the year-long Capstone course will focus on the foundations of building a goal-driven classroom. When the school year begins, students will embark upon the important work of getting to know their students and their school setting. Building on their knowledge of data-driven instruction, students will use the information gained about their teaching placement and their students in order to set ambitious goals both for their classroom as a whole and for individual students. Students will also use investment and engagement strategies to launch their vision and goals with their

students. Throughout the semester, students will acquire new skills related to data analysis and remediation. Students will be asked to develop a classroom vision, academic and social-emotional goals, systems to track and share progress, and a classroom management and investment plan. An important component of the Capstone course will be one-on-one instructional coaching. The Capstone coach will support each student as they work to apply the content of the course to their individual schools and classrooms. The coaching cycle will consist of a classroom observation, a coaching conversation, and follow-up action steps, and this will occur on a biweekly basis.

Credit 3 units.

Typical periods offered: Fall

CAPS-EDUC 5075 MATL Capstone Seminar II

During semester two of the Capstone Seminar, students will begin drafting their Master's Capstone. Students will curate a Capstone portfolio, displaying their best work from the past two years of teaching. Students will also report on their students' final achievement and socio-emotional growth results. In sum, the final Capstone will consist of the Capstone portfolio, a film of an outstanding lesson, the presentation of a data narrative, and the delivery of an oral defense. For the oral defense, students will present and defend their K-12 students' growth and achievement data, as well as key learnings from their residency and master's course work, to faculty members and guests. Prerequisite: Instructor approval.

Credit 3 units.

Typical periods offered: Spring

CAPS-EDUC 5080 Continuing the Portfolio Process

Seminar format used to facilitate continuing portfolio development. Emphasis on making connections between university coursework and individual teaching practice. On-going professional dialogue with peers and mentors provide direction and collegial support as students use the portfolio process to construct meaning out of their teaching experience and provide a clearer vision of their growth and development as a teacher.

Credit 1 unit.

Typical periods offered: Spring

CAPS-EDUC 5081 MATL Instructional Coaching Practicum I

For MATL students only. Instructor approval required. The Instructional Coaching Practicum is a year-long course that will be taught over the course of two semesters. It prepares students to effectively demonstrate the key instructional coaching competencies and support the development of a novice educator. In this practicum, highly-effective veteran teachers will develop the knowledge, skills, and mindsets needed for instructional coaching, with an emphasis on instructional coaching of novice teachers. During this practicum, candidates will host a novice teacher resident in their classroom as a co-teacher for the school year. They will set goals for the novice teacher's development, and build coaching skills to support the candidate's development over the course of the school year. Candidates in the practicum must hold a current Missouri state teaching license and have taught for at least three years.

Credit 1.5 units.

CAPS-EDUC 5085 MAEd Portfolio Presentation

Using the working portfolio and conferring with mentors and instructors, students will reflect on portfolio process and prepare final MAEd presentation portfolio for evaluation. Prerequisite: Continuing the Portfolio Process

Credit 1 unit.

Typical periods offered: Fall, Spring, Summer

CAPS-EDUC 5090 Supporting Special Populations

For MATL students only. This course will focus primarily on the skills teachers need to effectively serve students with disabilities and English Language Learners. The course will first focus on developing the foundational knowledge, skills, and strategies for teaching students with special needs. Candidates will explore special education history and laws, theoretical concepts, and instructional practices that facilitate the integration and support of students with special needs in the general education classroom. This course focuses on the inclusion of students with high-incidence disabilities, with the understanding that an inclusive framework can be applied to support students with other disabilities and a variety of learning needs. In this course, students will also be introduced to the historical, political, and legal foundations of educational programs for English learners. The course will provide an overview of theories of second language learning and research on the effectiveness of various means of promoting academic achievement in linguistically diverse contexts. Students will also be equipped with a repertoire of methods to facilitate and measure students' growth in English language and literacy, and to create learning environments that promote content area learning through the use of integrated ELD.

Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 5138 Expanding Mindsets and Supports for Exceptional Learners

For MATL students only. Teaching exceptional learners is one of the best growth opportunities for teachers to diversify their strategies and skill sets. Although accommodations and modifications can often feel overwhelming or simply like a mandate where the box must be checked by federal law, it also presents an opportunity for teachers to learn, grow, and serve all learners better. In this course, we will dissect and reflect on the core principles of instruction, high-impact teaching strategies, cognitive learning strategies, and school experiences to put ourselves in the shoes of an exceptional learner in a modern-day inclusive classroom. We will explore and analyze different strategies for creating compelling, engaging, creative, and individualized accommodations and modifications. For each topic addressed, students will be asked to approach assignments from their lens and the lens of an exceptional learner. Through this process, teachers will uncover the power of profoundly understanding individual learning needs and their students' social-emotional relationship with learning to create effective accommodations and modifications that allow them to accelerate student learning.

Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 5142 Black Is...Black Ain't: Society, History, and the Politics of Race

PRIVATE CROSSLIST FOR MAED STUDENTS ONLY This course is framed by a simple contradiction. Race is socially constructed, yet racial categories have very real social, economic, material, legal, and health consequences. Racial categories are rooted in history and culturally constructed through laws, the media, and various institutions. These categories are reproduced, subverted, and sometimes changed by people through socialization, media consumption, interaction, dialogue, protest, and political participation. Yet, what makes race real, animates it with so much power, and fosters its tenacious hold on much of the Western world's collective psyche? It is the fact that people largely believe that race has something to do with nature, biology, or rational science. Ironically, it is biology and the so-called natural sciences that provide the best evidence that there is no valid basis to organize people by racial categories. We will explore both race's historical construction and its contemporary manifestation as a crucial aspect of many places around the world and an integral component of people's identity. Drawing on classical and contemporary readings from Du Bois to Gould to Gilroy to contemporary ethnographies, we ask

whether the logic of race has shifted over time, and with that changed logic, how we can respond today to new configurations of race, science, technology, and inequality. Considered are the rise of evolutionary racism, debates about eugenics in the early twentieth century, Nazi notions of racial hygiene, nation-building projects and race in Latin America, colonial monuments, racialized state violence, and Black liberation such as the Black Lives Matter Movement. At the conclusion of this course, you should be able to critique contemporary ideas of biological notions of race; explain how race is socially constructed through laws, media, and popular culture; and understand that patterns of human diversity do not fit neatly into categories of race. Finally, you will begin to understand why race remains a powerful force in contemporary society.

Credit 3 units. UCOLL: ACH

CAPS-EDUC 5150 Practicum in Teaching and Learning

For current students admitted to the Master of Arts in Teaching and Learning. Requires concurrent enrollment.

Credit 0 units.

Typical periods offered: Summer 4, Summer 3, Summer 2, Summer 1, Summer, Spring, Fall

CAPS-EDUC 5212 Language Essentials for Teachers of Reading and Spelling, Volume I

FOR MATL STUDENTS, ONLY. Lexia LETRS stands for: Language Essentials for Teachers of Reading and Spelling. LETRS is a professional learning course for instructors of reading, spelling, and related language skills. It provides educators with in-depth knowledge and tools that they can use with any reading program. LETRS is composed of two volumes of content: Volume 1 (Units 1-4) and Volume 2 (Units 5-8). As part of the LETRS (Language Essentials for Teachers of Reading and Spelling) cohort, teachers will learn the science of reading in order to apply research in the classroom and meet the literacy needs of early learners. Teachers will gain practical strategies to use regardless of curriculum or program currently in place. LETRS Volume I introduces teachers to the science of reading through understanding theoretical frameworks for how people learn to read, and how to apply evidence-based strategies to support reading acquisition. After learning about these frameworks, participants discuss common challenges in learning to read, what happens in our brains when we read, and how language and literacy are related. Next, the course delves into phonological skill development. Combining both theory and application, participants are then prepared for teaching early phonics, word recognition, and spelling in an elementary classroom. Candidates will practice analyzing and facilitating effective phonics instruction, and will also prepare to support advanced decoding, spelling, and word recognition. Finally, the course will discuss assessment systems to support reading acquisition, including how to utilize universal screeners, diagnostic assessments, and systems for progress monitoring.

Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 5222 Language Essentials for Teachers of Reading and Spelling Volume 2

Lexia LETRS® stands for: Language Essentials for Teachers of Reading and Spelling. LETRS is a professional learning course for instructors of reading, spelling, and related language skills. It provides educators with in-depth knowledge and tools that they can use with any reading program. LETRS is composed of two volumes of content: Volume 1 (Units 1-4) and Volume 2 (Units 5-8). As part of the LETRS (Language Essentials for Teachers of Reading and Spelling) cohort, teachers will learn the science of reading in order to apply research in the classroom and meet the literacy needs of early learners. Teachers will gain practical strategies to use regardless of curriculum or program currently in place. LETRS Volume II specifically focuses on the language comprehension strand of Scarborough's reading rope. Teachers will

study and learn about how students approach and comprehend texts, and the pedagogical strategies and supports that teachers can implement to support student reading comprehension. They learn how to create vocabulary rich environments, and make strategic decisions around the introduction and support for vocabulary acquisition, both explicitly and implicitly. Finally, teachers will explore the reading/writing connection, with a focus on how to support the development of writing a paragraph to multi-paragraph writing outputs, and how to scaffold and support writing development.

Credit 3 units.

Typical periods offered: Summer 3, Spring, Fall, Summer

CAPS-EDUC 5231 MATL Instructional Coaching Practicum II

For MATL students only. Instructor approval required. The Instructional Coaching Practicum is a year-long course that will be taught over the course of two semesters. It prepares students to effectively demonstrate the key instructional coaching competencies and support the development of a novice educator. In this practicum, highly-effective veteran teachers will develop the knowledge, skills, and mindsets needed for instructional coaching, with an emphasis on instructional coaching of novice teachers. During this practicum, candidates will host a novice teacher resident in their classroom as a co-teacher for the school year. They will set goals for the novice teacher's development, and build coaching skills to support the candidate's development over the course of the school year. Candidates in the practicum must hold a current Missouri state teaching license and have taught for at least three years.

Credit 1.5 units.

Typical periods offered: Spring

CAPS-EDUC 5970 Adult Learning Strategies and Practices / BJCE

The study of adult learners and effective instructional techniques for the workplace, classroom, and other organizational settings including those in healthcare, non-profit, business, and human resources. Situation-appropriate selection, design, and practice of techniques that are compatible with adult learning principles including discussion, demonstration, explanation, case study, role play, coaching and reflection. Tailoring content and learning strategies to meet adult learners' needs and the instructional objectives whether individual or large group.

Credit 3 units.

CAPS-EDUC 6033 Scientific Inquiry for the Classroom Teacher

An inquiry-based course for practicing teachers in the elementary and middle school, grades K-8. Teachers will strengthen their conception of inquiry-based teaching as they learn to create a culture of inquiry in their classroom to nourish 21st century learners through STEM. Teachers will learn how to incorporate thinking routines as they encourage students to explain phenomena and design solutions to real-world problems. Teachers will learn strategies for encouraging collaboration and active learning. The continuum of inquiry will be explored as teachers learn how to move to student-centered learning that encourages lifelong learning through inquiry. A school-based implementation project will be required. Topics to vary by semester. Prerequisite: permission of instructor. For STEM Teacher Quality Institute students only.

Credit 3 units.

Typical periods offered: Fall, Summer

CAPS-EDUC 6035 Advanced Scientific Inquiry for Educators

This course is designed to prepare teachers to strengthen skills associated with the delivery of a successful inquiry-based science curriculum in the K-8 classroom. Through laboratory experiences and discussions teachers will work on developing questioning strategies,

sequencing activities to support the various experiential levels of students and developing relevant lessons and activities from student questions. Classroom project required. Course is intended for in-service teachers. Prerequisite: permission of instructor.
Credit 3 units.

CAPS-EDUC 6045 Hands-On Science K-8: Matter and Energy

Laboratory experiences, discussion and lectures designed to prepare teachers to implement or strengthen hands-on science teaching in the grades K-8. Inquiry activities illustrating basic matter, and energy and chemistry concepts will be selected in congruence with the National Science Education Standards and the Missouri Show-Me Standards. Prerequisites: Permission of instructor; for STEM Teacher Quality Institute students only.
Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 6050 Hands-On Science K-8: Mathematics Concepts

Discussion intensive and lecture course designed to prepare teachers to implement or strengthen hands-on mathematics teaching in grades K-8. Inquiry activities illustrating numeration, rational numbers and ratios will be selected in congruence with the NCTM Principles and Standards for School Mathematics, the National Science Education Standards, and the Missouri Show-Me Standards. Prerequisite: permission of instructor; intended for in-service teachers.
Credit 3 units.

CAPS-EDUC 6060 Hands-On Science K-8: Earth and Planetary Systems

Laboratory experiences, discussion and lectures designed to prepare teachers to implement or strengthen hands-on science teaching in grades K-8. Inquiry activities illustrating planetary motion, tides, lunar phases, constellations, comets, terrestrial planets, gas giants, plate tectonics, volcanoes and earthquakes will be selected in congruence with the National Science Education Standards and Missouri Show-Me Standards. Registration fee of \$200 collected first night of class. Prerequisite: permission of instructor; intended for in-service teachers.
Credit 3 units.

CAPS-EDUC 6065 Scientific Inquiry: Advanced Pedagogy for Educators

This course is designed to prepare teachers to strengthen skills associated with the delivery of a successful inquiry-based science curriculum in the K-8 classroom. Through laboratory experiences and discussions, teachers will work on a variety of pedagogical skills including developing questioning strategies and sequencing activities to support the various experiential levels of students. Participants will conduct an implementation project at their school or learning site. Scientific themes, structured in accordance with national and state standards, vary by semester.
Credit 1.5 units.

Typical periods offered: Spring

CAPS-EDUC 6070 Scientific Inquiry and Teacher Leadership

An advanced inquiry-based science course for practicing teachers, grades K-8. Participants will be introduced to a variety of science curricula and methods to use in the critical analysis of curricula for reform-based qualities. In addition to science content and pedagogy, participants will practice working with teacher teams to write assessments and use a variety of data types to make decisions about ways to assure that all children gain access to high quality science curricula. Participants will conduct an implementation project at their school or learning site. Scientific themes, structured in accordance with national and state standards, vary by semester.

Credit 3 units.

CAPS-EDUC 6075 Hands-On Science K-8: Earth Systems

Laboratory experiences, discussion and lectures designed to prepare teachers to implement or strengthen hands-on science teaching in grades K-8. Inquiry activities involving the water cycle, erosion, the earth's composition, weather patterns, geology and natural resources will be selected in congruence with the National Science Education Standards and the Missouri Show-Me Standards. Registration fee of \$200 collected the first night of class. Prerequisite: Permission of instructor; intended for in-service teachers.
Credit 3 units.

CAPS-EDUC 6080 Botany, Ecology, and Visual Technology I

The BEVT courses comprise a new inquiry-based professional development sequence for teachers of grades 4 through 8. The overall aim of the course is for participants to develop deeper understanding of principles of biology and ecology, understanding of and skill with new technologies available for learning about biology and ecological principles, and fluency with the broader scientific and technological context of this subject matter. The first semester of this two-semester course incorporates 1) ecology, with particular attention to local grassland (prairie) ecosystems of Missouri and Illinois, 2) general plant biology, and 3) plant life strategies, with particular attention to grasses and their roles in the prairie. Several field experiences are included in the course. The course will also include experience with visual technology tools that enhance instruction and student learning. Instructors will highlight topical correspondence to current Missouri Curriculum Frameworks and the new draft Grade-Level Expectations (GLE's).
Credit 3 units.

CAPS-EDUC 6081 Botany, Ecology, and Visual Technology II

The BEVT courses comprise a new inquiry-based professional development sequence for teachers of grades 4 through 8. The overall aim of the course is for participants to develop deeper understanding of principles of biology and ecology, understanding of and skill with new technologies available for learning about biology and ecological principles, and a fluency with the broader scientific and technological context of this subject matter. Spring semester: the second semester of this two-semester course will build on the information and concepts of plant biology, plant life strategies, and the ecology of local ecosystems developed during the fall semester; continue hands-on experimentation; and explore issues of the changes and challenges to intact ecosystems represented by modern human activities. Participants will develop competence with one or more computer graphic (visual) tools relevant to these topics, especially GIS (global information systems) software, which they can then use to enhance student learning in their own classrooms. Instructors will highlight topical correspondence to current Missouri Curriculum Frameworks and the new draft Grade-Level Expectations (GLE's). Half-day field and laboratory experiences on weekends will replace some weeknight class sessions.
Credit 3 units.

CAPS-EDUC 6085 Hands-On Science K-8: Diversity of Life

This course includes laboratory experiences, discussion, exploration of different teaching strategies and lectures designed to prepare teachers to implement or strengthen hands-on science teaching in grades K-8. The course topics include the taxonomy and characteristics of the major groups of protists, plants, and animals as well as issues affecting biodiversity (genetic, species and ecosystem diversity). Inquiry activities that illustrate the content are selected in congruence with the National Science Education Standards and Missouri Show-Me Standards. A registration fee of \$200 is collected the first night of class. Prerequisite: permission of instructor; intended for in-service teachers, grades K-8.

Credit 3 units.

CAPS-EDUC 6090 Researched Practices in Math Instruction

FOR MATL STUDENTS, ONLY. A pedagogy course for practicing teachers in the elementary and middle school, grades K-8. The course is an introduction to research-proven practices in mathematics, supported by math content. These pedagogical practices include the use of student-work to inform conceptual development, the use of small-group instruction as situated in a diverse set of classroom organizational patterns, approaches to conceptual change and conceptual development, uses of formative assessment, direct instruction, etc. For any particular workshop, a set of approaches and the research associated with it are presented in relation to standards-based content topics. Participants are engaged in developing their math content and pedagogical skills with a primary emphasis on the learning of high quality classroom practices. Participants conduct an implementation project at their school or learning site to ensure that what they learn is effectively applied within their own classroom setting.

Credit 3 units.

Typical periods offered: Fall, Summer

CAPS-EDUC 6095 Statistics for Teachers I

This course addresses statistical reasoning for teachers. The course begins by exploring student understanding of basic statistical concepts underlying data exploration and description. Concepts of data displays (bar graphs, histograms, circle graphs etc.) are used to explore the ideas of distribution, variation, and measures of central tendency (mean, median and mode). Also introduced are approaches to exploring covariation, both as simple ideas of correlation and linear relation. The course also includes an introduction of issues of precision and error and the underlying role of probability in examining data relations. The software Fathom is used along with examples of student work. Tabletop software will also be used as a tool for examining databases and analyzing, categorizing and sorting databases according to attributes and in search of patterns. Representations include stacks, plots and venn diagrams. Using these two tools, teachers will be confident of how to assist students in a) successfully performing statistical items on statewide tests, b) using statistics and databases to conduct investigations in science and c) preparing students for statistical concepts in later grades.

Credit 3 units.

CAPS-EDUC 6105 Improving Content and Instruction: Algebra

This course will focus on topics in Algebra, focusing on topics covered in the national framework standards document, grades 4-9. Prerequisite: Must be a practicing teacher and have approval of the instructor to enroll.

Credit 3 units.

Typical periods offered: Spring

CAPS-EDUC 6106 Scientific Inquiry: Advanced Pedagogy for Educators, Part II

This course is designed to prepare teachers to strengthen skills associated with the delivery of a successful inquiry-based science curriculum in the K-8 classroom. Through laboratory experiences and discussions, teachers will work on a variety of pedagogical skills including developing questioning strategies and sequencing activities to support the various experiential levels of students. Participants will conduct an implementation project at their school or learning site. Scientific themes, structured in accordance with national and state standards, vary by semester. This is Part II of a two-part series.

Credit 1.5 units.

CAPS-EDUC 6107 Leadership in Scientific Inquiry

In this course, students review literature related to science teacher leadership. Students conduct an implementation project in which they direct a test of change, a defined professional development program, or another leadership experience targeting a specific audience. Students read and discuss different models for inquiry-driven change, implement an innovation, collect and analyze data, and determine impact.

Credit 3 units.

CAPS-EDUC 6108 Reading and Writing in the Science Content Area

This course will study the theoretical frameworks underlying literacy (reading and writing) instruction in the science classroom. Teachers in this course will learn research-based instructional methodologies to support disciplinary literacy and content literacy practices. Teachers will gain an understanding of how explicit literacy instruction connects with and supports three-dimensional curriculum and instruction. Teachers will use trade books, implement strategies to teach the comprehension of scientific text, and explore ways to support student writing in the science classroom, including using graphic organizers, note-taking strategies, and constructing written explanations and lab reports. Teachers will apply their learning to develop unit plans and lesson plans that strategically incorporate literacy strategies to support student learning in the science classroom. A class project is required.

Credit 3 units.

CAPS-EDUC 6109 Improving Content and Instruction: Probability and Statistics (K-8)

Students will learn how to analyze the progression of learning that students encounter in middle and high school and how to engage students in probability and statistical thinking using authentic learning opportunities. The course will give teachers the opportunity to learn and practice research-based strategies for teaching these concepts and skills to students.

Credit 3 units.

CAPS-EDUC 6110 Equity in the Math Classroom

Students will consider ways to embed equitable practices in the math classroom by studying practices that support access to math knowledge and thinking for all students. They will discuss the historical context that has led to inequality in the American classroom and practice embedding inclusive practices into math teaching in service of closing the achievement gap in our schools, especially for girls and students of color. For STEM Teacher Quality Institute students only.

Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 6111 Computational Thinking Across the Curriculum

This course focuses on applying computational thinking across disciplines in grades K-8. Teachers will develop their understanding of the main concepts and skills involved in computational thinking and learn how to incorporate these into their curriculum across domains. A classroom implementation project is required.

Credit 3 units.

CAPS-EDUC 6112 Educational Technology

The course will emphasize how to use technology in meaningful ways. Teachers in this course will critically evaluate the purpose, potential privacy concerns, and cognitive barriers of ed-tech hardware and software. They will learn how to use educational technology to create opportunities for deeper learning. A classroom project is required.

Credit 3 units.

CAPS-EDUC 6113 Engineering Across the Curriculum

This course is designed to introduce teachers to how engineering concepts can be used to engage students in learning via interdisciplinary lessons. Teachers will engage in and develop learning experiences that utilize different resources to engineer solutions. Resources may include devices, robots, software, and materials easily found in classrooms. A classroom implementation project is required. Credit 3 units.

CAPS-EDUC 6114 Introduction to Computer Science Teaching

This course is designed to introduce teachers to the fundamental concepts and practices of computer science (CS). Teachers will be engaged in experiences designed to provide authentic, meaningful experiences with both CS topics and pedagogy. Current Missouri CS Standards and the K-12 CS Framework will be used as a framework for discussion. A classroom project is required. For STEM Teacher Quality Institute students only. Credit 3 units.

CAPS-EDUC 6115 Project Based Learning: Connecting Stem Learning in Interaction With the World

Motivated, engaged learning requires a purpose - a relevant connection to the world and one's community. Projects that solve a problem or have this direct connection come from curiosity and produce high levels of learning, often in transformative ways. When engaged learning is combined with effective collaborative groups that have unity of purpose and address mutual needs, you are teaching students to interact effectively with their world! This course is designed as a project, modeling the steps used in project-based teaching, learning, facilitation and assessment, and ending with the final product of a PBL unit for specific use in each individual's classroom setting. Open to MATL students, STEM+C students, and current teachers. Credit 3 units.

Typical periods offered: Summer

CAPS-EDUC 6120 Scientific Inquiry: Advanced Pedagogy for Educators - MATL

This course is designed to prepare teachers to strengthen skills associated with the delivery of a successful inquiry-based science curriculum in the K-8 classroom. Through laboratory experiences and discussions, teachers will work on a variety of pedagogical skills including developing questioning strategies and sequencing activities to support the various experiential levels of students. Participants will conduct an implementation project at their school or learning site. Scientific themes, structured in accordance with national and state standards, vary by semester. Credit 1.5 units.

CAPS-EDUC 6122 Scientific Inquiry for the Classroom Teacher - MATL

A inquiry-based course for practicing teachers in the elementary and middle school, grades K-8. Teachers will strengthen their conception of inquiry-based teaching as they learn to create a culture of inquiry in their classroom to nourish 21st century learners through STEM. Teachers will learn how to incorporate thinking routines as they encourage students to explain phenomena and design solutions to real-world problems. Teachers will learn strategies for encouraging collaboration and active learning. The continuum of inquiry will be explored as teachers learn how to move to student-centered learning that encourages lifelong learning through inquiry. A school-based implementation project will be required. Topics to vary by semester. Prerequisite: MATL Students and permission of instructor. Credit 3 units.

CAPS-EDUC 6125 Practical Strategies for Teachers to Effect Personal Change

This course features six 1-credit-unit sections that cover diverse topics. The course is designed for teachers who want to develop skills and knowledge that they can apply in their classrooms. The sections do not overlap; each is independent of the others. Teachers may choose to enroll in as few (one) or as many (up to six) topic sections as they desire, and they will receive 1 credit unit for each topic section they successfully complete. Students can enroll in more than one section at a time up to a maximum of six. For STEM Teacher Quality Institute participants only. Credit 1 unit.

CAPS-EDUC 6130 Improving Content and Instruction: Algebra - MATL

This course will focus on topics in Algebra, focusing on topics covered in the national framework standards document, grades 4-9. Prerequisite: Must be a practicing teacher and have approval of the instructor to enroll. Credit 3 units.

CAPS-EDUC 6135 Equity in the Math Classroom

Students will consider ways to embed equitable practices in the math classroom by studying practices that support access to math knowledge and thinking for all students. They will discuss the historical context that has led to inequality in the American classroom and practice embedding inclusive practices into math teaching in service of closing the achievement gap in our schools, especially for girls and students of color. For STEM Teacher Quality Institute students only. Credit 3 units.
