COURSE DESCRIPTIONS

EDU 5010 | Advanced Instructional Technology for the 21st Century (3)

A study of the integration of technology into the 21st Century classroom addressing the NETS Standards for Teachers and Administrators. Emphasis is placed on Web 2.0 technologies such as blogs, wikis, podcasts, and social networking sites as well as interactive technologies including whiteboards and student response systems. Students will also complete an in-depth exploration of an issue surrounding the use of technology in the classroom. Students registering for the course will complete a survey measuring the pre-requisite technology skills required for successful completion of the class. A weeklong workshop will be offered for students who need to acquire additional skills before beginning the course. *Prerequisite: Proficiency Test Required*

EDU 4511/5011 | Technology Integration for Elementary STEM and Literacy Based Programs (3)

A study of the integration of technology into the 21st Century classroom addressing the NETS Standards for Teachers and Administrators. Emphasis is placed on Web 2.0 technologies such as blogs, wikis, podcasts, and social networking sites as well as interactive technologies including whiteboards and student response systems. Students will also complete an in-depth exploration of an issue surrounding the use of technology in the classroom. (3) Students registering for the course will complete a survey measuring the pre-requisite technology skills required for successful completion of the class.

EDU 5020 | Curriculum Development (3)

Curriculum analysis, using the North Carolina Core and Essential Standards as a guide. The processes, strategies, and techniques used to produce the state curriculum will be discussed. Methods appropriate for assessing individual learning needs in this performance-based curriculum will be presented and classroom practices for meeting these needs will be introduced and practiced. Curriculum relevance, rigor, connectedness, and the integration of 21st century content and skills into educational practices will be discussed.

EDU 5030 | Methods of Educational Research (3)

An examination of the current research design methodologies which are relevant to the field of education. Exploration of quantitative and qualitative approaches will be presented as candidates learn how to evaluate published research for relevance, credibility, and generalization in informing school practice. Candidates are required to complete an action research project which is designed to analyze a current diversity issue relevant to the current school setting and how this research can be applied to improving home, school/community partnerships.

EDU 5040 | Diversity in Education: Societal and Organizational Perspectives (3)

This course addresses diversity issues in education extending beyond the classroom regarding school, district, and community practices. Candidates will research the implications of these practices and propose strategies to incite change in their schools and communities. Topics may include gender, socioeconomic status, sexual identity as well as racial, ethnic, and religious backgrounds.

EDU 5050 | Classroom Organization and Management (3)

A discussion of classroom management strategies and techniques for maintaining an orderly and safe learning environment for all students. Functional assessment, data collection procedures and the development of interventions using the Responsiveness to Instruction model will be emphasized. Candidates will be required to complete a series of assignments that will allow for the development of skills in record keeping, data collection, and intervention implementation and evaluation.

EDU 5060 | Developing Leaders in 21st Century Schools (3)

This course is designed to develop effective leadership skills in decision-making, strategic goal setting, and collaboration. Candidates will interact and work with each other to formulate their own approaches to distributed leadership as they develop a shared vision of school improvement, responsibility, and site-based accountability across all stakeholders.

EDU 5070 | Trends and Issues in Education (2-3)

Discussion of current trends and issues in education and the historical foundations which have influenced them will be presented. Candidates will study a core set of trends and issues including topics such as 21st century schools, standards-based reform, privatization of schools, and the core principles that define democratic education in our country. Specific strands in elementary education, special education, literacy, and school administration will allow candidates enrolled in this course to focus on a more in-depth study of educational trends in issues related to their own interests and program of study. A final APA research paper related to a current issue of interest will be required.

EDU 5080 | Advanced Educational Psychology (3)

This course includes an examination of the contemporary educational psychology theories of human behavior and learning most applicable in today's 21st century classrooms. Research practices and application of theories in development, instruction, and classroom management including learning styles, differentiation, and brain-based research will be emphasized.

EDU 5090 | **Individuals with Intellectual Disabilities: Legal, Ethical, and Historical Perspectives (3)**
An in-depth examination of the historical perspectives of persons with intellectual disabilities including past and current research, theories, and issues related to causation. Relevant legislation, including compliance issues, will be addressed both historically and currently within the sociopolitical environment. Ethical issues will include self-advocacy, transition, behavior management, and collaboration among professionals, parents, and community.

EDU 5130 | **Numerical Representations and Number Concepts in Elementary Mathematics (3)**
An investigative approach to the study of the concepts underlying the mathematics taught in grades K-6 and the connections to algebra, science, engineering, and technology. Candidates will explore relationships between number, operations, and representations in real-world contexts as they develop an understanding of the structure and coherence of mathematics. The Common Core Standards for Mathematical Practice and Standards for Mathematical Content will be emphasized to help candidates relate the concepts learned mathematical practices in the K-6 classroom.

EDU 4531/5131 | **Literature and Informational Texts for Children and Young Adults (3)**
This graduate course will include a critical examination of the characteristics of successful literature programs and exploration of criteria for evaluating and selecting quality children's and young adult literature and informational texts across levels of text complexity and content for the purposes of enhancing teaching and learning. Emphasis will include critical and pedagogical issues in children's and young adult literature. Candidates will describe and develop theories of response to literature that integrate the language arts, technology, and visual/performing arts.

EDU 5132 | **Foundations of Writing Instruction (3)**
This course will examine process writing models, stages for encouraging writers to select, draft, revise, share, edit, and publish topics within a variety of genres. Strategies, use of literature for children and adolescents for establishing criteria of good writing demonstrated and evaluated. Writers' workshop, effective use of authentic reasons for writing, time, mini-lessons, teacher conferences, collaborative student revisions and editing groups. Strategies for teaching phonics, spelling, and grammar in context. Strategies for preparing for NC writing tests. Websites for supporting young writers and publishing their texts. Lesson/Unit planning required.

EDU 5133 | **Integrated Principles of Science and Social Studies Instruction (3)**
This course is designed to enhance elementary teacher content knowledge and use of differentiated strategies in science and social studies. Candidates will gain content knowledge by practicing various methods of teaching integrated science and social studies and develop authentic applications in real-world situations. The unifying concepts of science will be integrated with the five themes of geography utilizing an inquiry-based approach throughout the course. Science areas covered will include: physical, life, earth/space, and technology. Social studies areas covered will include: geography, world and US history, political science, economics, anthropology, sociology and psychology. The course will be taught using a place-based education approach with the environment as the unifying concept.

EDU 5134 | **Foundations of Reading Instruction (3)**
An examination of the social, cognitive and linguistic foundations of literacy development. Critical reading of professional literature to articulate and support a philosophy of literacy development which emphasizes the interrelatedness of the language arts for English proficient and potentially English proficient students. Demonstrations of varied instructional and management strategies to develop print rich classroom environments and to teach and support children's efficient use of the syntactic, semantic, graphophonemic and pragmatic cue systems .

EDU 5135 | **Diagnosis and Assessment in the Teaching of Reading (3)**
Procedures to assess a reader's definition of reading, attitudes, interests, use of cue systems, reading strategies and understanding of text. Evaluation of data to select, apply and modify instructional strategies. Use of assessment strategies for ongoing, systematic evaluation, diagnosis and instruction. Recording summaries of assessment data on graphic profiles and in written reports to communicate with parents, students and other educators. To become a reflective practitioner using inquiry-based professional growth and improved instruction. Research, student analysis, field experience required. Strategies for NC End of Grade tests. *Prerequisite: EDU 5134: Foundations of Reading Instruction*

EDU 5136 | **Content Area Literacy (3)**
This graduate level course will include a critical examination of the necessary conditions of content area literacy learning and an exploration of print and non-print texts across all genres (informational texts, literature, and poetry) to extend and deepen understanding of content across disciplines. Candidates will assess text complexity, accessibility, and level of support for students in order to match text to readers. Emphasis will include planning and implementing pre-reading, reading, and post-reading instructional strategies for fostering content area literacy and an understanding of assessment as it is used to drive comprehension, vocabulary, and study skills instruction in elementary, middle and secondary content-area classes.

EDU 5137 | Integrating STEM Instruction into the Elementary Classroom (2)

This course examines the methods, processes and procedures for integrating project-based STEM strategies into instruction to build inquiry, problem-solving, and critical thinking skills of K-6 learners. *Co-Requisite EDU 5130*

EDU 4538/5138 | Literacy Support of the e-Learning Community (3)

This online course provides an opportunity for students to collaborate through a learning community forum regarding research-based literacy practices. Weekly modules and support from a literacy faculty member will offer students a risk-friendly environment to ask questions, share concerns, and grow in their understanding as literacy educators. Additionally, an online tutorial to independently prepare students for the Praxis II Reading Specialist exam will also be provided. *(Not Required for the degree but an elective for candidate seeking to prepare for the Praxis II Specialty Exam in Reading Specialist)*

EDU 5141 | Curriculum Assessment and Planning for Students with Intellectual Disabilities (3)

This course will focus on effective assessment and instruction for persons with intellectual disabilities. An investigation of the formal and informal assessment strategies used in the diagnosis and instructional planning for individuals with intellectual disabilities. Emphasis is placed on designing assessment strategies that lead to the implementation of instructional plans within the school and community setting. This course will also address effective instructional methods and strategies for students with intellectual disabilities.

EDU 5142 | Instructional and Transition Planning for Elementary Students with Intellectual Disabilities (3)

Students will examine the strands and goals of the North Carolina Course of Study appropriate for elementary age students with intellectual disabilities. The North Carolina Standard Course of Study and the Extended Content Standards will be utilized in developing effective instruction for students with intellectual disabilities. Transition issues related to this population will also be addressed including community agencies that provide services to elementary age students and their families. This course includes a field based component.

EDU 5143 | Instructional and Transition Planning for Secondary Students with Intellectual Disabilities (3)

Students with examine the strands and goals of the North Carolina Course of Study appropriate for secondary students with intellectual disabilities. The Occupational Course of Study as well as Extended Content Standards will be emphasized. The policies and procedures governing students preparing for and entering the workforce and/or continued education will be examined as well as community resources available for successful transition issues. Students will develop transition plans and discuss methods to involve the student, family, and future employers in meeting the needs of persons with intellectual disabilities. This course includes a field based component.

EDU 5144 | Consultation and Collaboration with Families and Community Agencies (3)

This course will emphasize providing supportive resources and information to students, parents, and other professionals in order to maximize student learning experiences and educational outcomes. Students will access resources and information and share these with professionals in the field of special education. This course includes a field based component.

EDU 5145 | Assistive Technology and Instructional Support for the 21st Century Classroom (3)

Examination of low and high levels of assistive technology and augmentative communication devices available to meet the needs of persons with intellectual disabilities. Building on this knowledge, participants will learn how to enhance instruction, assessment, accommodations, communications, and administrative duties. Collaboration with available community and school resources in conducting assistive technology assessment will be emphasized.

EDU 5146 | Building Self-Determination and Advocacy Skills in Persons with Intellectual Disabilities (3)

This course will address behavior issues common for people with intellectual disabilities as well as effective instructional practices for the promotion of self-advocacy, self-determination, problem-solving, and generalization of these skills to multiple settings — including employment, post-secondary instruction, and community-based living and involvement. The establishment of respectful environments across the life-span will also be addressed.

EDU 5160 | Instructional Planning and Assessment in Secondary Mathematics (3)

Candidates enrolled in this course will design and develop lesson plans and curriculum units to engage students in grades 9-12 to think critically and problem solve in the area of mathematics. Integration of 21st century strategies, content and skills will be emphasized in the application of mathematics to real world applications. The N.C. Standard Course of Study and NCTM Guidelines will be reviewed as candidates create a Curriculum Integration Project that infuses technology and literacy as required for N.C. licensure.

EDU 5166 | Using Data for Instructional Improvement (3)

Candidates will develop formative and summative assessments to monitor and plan for instruction. An

examination of the strategies used in making data based decisions will be emphasized, particularly as these strategies impact student learning and overall school improvement.

EDU 5171 | Strategies for Student Learning and Development (3)

Professional development is regarded as a cornerstone for the implementation of standards-based reform. This course is designed to use data to determine staff needs to plan and implement effective professional development, using professional learning communities, that will positively impact student learning and development.

EDU 5172 | Implementing Distributed Leadership for Teacher Empowerment (3)

This course is designed to explore the many facets of distributed leadership in a public school setting. Candidates will be introduced to the foundational concepts that impact teacher expertise and empowerment such as building trust, understanding the change process, using the characteristics of adult learners to select teacher leaders, and the factors related to competent supervision. *Prerequisite: EDU 5060*

EDU 5173 | Using Data for School Improvement (3)

Success of school executives depends on the ability to interpret data and develop strategies to use that data to drive targeted, thoughtful decisions about the school's students and programs. Candidates will examine how the instructional strategies used in the classroom align with known best practices and research findings, explore the alignment between what is being taught and state standards, and develop actionable goals to improve student performance based on the analysis of, demographic, program, and perception data.

EDU 5174 | Organizational Management and Legal Issues for 21st Century Schools (3)

This course will focus on school leadership and organizational management of school executives. Topics will include management of resources, understanding the impact of legal and ethical issues in the decision-making process, conflict resolution, as well as effectively communicating expectations and establishing school-wide procedures. In this course, candidates will demonstrate the ability to work with others to monitor the effective use of financial and material resources through effective and timely communication and planning with the principal.

EDU 5199 | Evidence Continuation (1-3)

Independent opportunity for candidates to complete required evidences for licensure under the direct supervision of a graduate faculty member in the School of Education. Credit (1-3) will be determined at the discretion of the program coordinator.

EDU 5200 | Thesis (3)

Through collaboration with a faculty member, development and fulfillment of an organized research study relative to an issue in elementary or special education. Upon completion of the study, the student will defend the research in an oral presentation to the graduate faculty and candidates. *Prerequisites: Candidates must have completed a minimum of at least 12 graduate hours with grades of A or Co-Requisite: EDU 5030*

EDU 5200a | Thesis Continuation (0)

Required course fee registration for candidates who need additional time to complete the thesis requirements. *No Credit*

EDU 5230 | Clinical Internship in Elementary Education (3)

Candidates completing the MAT in Elementary Education will be provided with an opportunity to engage in the practical applications of the pedagogical and instructional strategies relevant to elementary education classrooms K-5. This ten week full-time internship occurs under the supervision of a graduate faculty member in elementary education and a cooperating elementary teacher in a public school setting.

EDU 5231 | Supervised Practicum in Literacy Program Implementation (3)

The purpose of the course is to provide candidates with the opportunity to establish conditions that support the implementation of a comprehensive literacy workshop model. Theories, materials, instructional strategies and assessment tools introduced during the program of study are applied in the classroom or on-campus literacy center. Candidates are supervised and attend seminars focused on supporting efforts to effectively implement the many facets of a literacy workshop model.

EDU 5232 | STEM Infused Principles of Robotics and Technology (3)

This course is designed to provide candidates with experience in the programming, and use of robotic software and robotics materials. Candidates will use STEM infused robotics and technology tools in lesson design for the K-6 classroom. Other STEM-infused technology tools including Vernier probe-ware, SmartBoard, inquiry-based kits, and problem-based learning curriculum materials will be utilized to enhance inquiry-based classroom instructional practices.

EDU 5233 | Connected Systems and Interdependence in Science (3)

An exploration of how the living world is connected to its physical surroundings. This course takes an integrated approach to the scientific study of Earth and its inhabitants. Students examine dynamic systems ranging from single cells to organisms and ecosystems and explore how life

is both constrained by and dependent upon the chemical and physical environment. Science content, based on the Science Curriculum Frameworks, is integrated with pedagogy so students not only learn about science topics but also ways they can include these topics in their own classrooms. Emphasis will be placed on addressing and correcting common misconceptions. Organizing themes for this course will include: Earth systems and evolution of life, the flow of energy, and physics of the senses.

EDU 5234 | Practicum Infused STEM Strategies for K-6 Classrooms (3)
This course will center on the teaching and research of strategies applicable to the NEXT Generation Science Standards for STEM in the elementary K-6 settings. The course will include activity sessions where strategies will be developed and then replicated in the classroom setting through a 30- hour practicum experience. Candidates will participate in demonstration teaching and the modeling of best practices for elementary STEM.

EDU 5240 | Clinical Internship in Special Education (3)
Students completing the M.Ed. in Special Education may choose to complete an internship experience that prepares them to assume the role of Executive Director in the Division of Exceptional Children Services. *Co-Requisite: EDU 5030*

EDU 5261 | Clinical Internship in Secondary Mathematics (3)
Candidates completing the MAT in Secondary Mathematics 9-12 will be provided with an opportunity to engage in the practical applications of the pedagogical and instructional strategies relevant to secondary education 9-12. This ten week full-time internship occurs under the supervision of a graduate faculty member in mathematics and a cooperating secondary mathematics teacher in a public school setting.

EDU 5271 | Creating a Culture of School Success (3)
21st Century School Executives must be able to work with the entire educational community for the purpose of creating a safe, positive, and engaging learning environment. This course is designed to enable candidates to identify needs, analyze data, and make recommendations for strengthening efforts related to community involvement and the creation of a successful school culture.

EDU 5300 | Product of Learning (3)
An opportunity for candidates to demonstrate, in a summative manner, mastery in pedagogy, content knowledge, and instructional implementation which are emphasized in the elementary or special education graduate degree program. This is a non-thesis product and must include a multimedia presentation to graduate faculty and students. *Co-Requisite: EDU 5030. Candidates must have completed a minimum of at least 12 graduate hours with grades of A or B.*

EDU 5300a | Product of Learning Continuation (0)
Required course fee registration for candidates who need additional time to complete the thesis requirements. Candidates must have completed a minimum of at least 12 graduate hours with grades of A or B. *No Credit*

EDU 5400 | School Executive Internship I (2)
This 75 hour initial internship is designed as an orientation to the internship experience and should be taken concurrently with the candidate's first year of coursework. It includes a mandatory orientation seminar and requires the completion of the *Professional Learning Communities Leadership Project, the Distributed Leadership Portfolio*, and the *School Indicators Analysis Project*. Candidates will be evaluated at the conclusion of EDU 5400 with the *North Carolina School Executive Evaluation Rubric for Preservice Candidates* and will be required to demonstrate acceptable scores before progressing to EDU 5500: *School Executive Internship II.*

EDU 5400a | School Executive Internship I Continuation (0)
If continued work is needed to fulfill activities/evidence completion as determined by a faculty/public school review team.

EDU 5500 | School Executive Internship II (2)
A continuation of EDU 5400, the 75 hour *School Executive Internship II* experience is designed to help the intern continue to apply skills related to school administration in the areas of organizational management and school law. The intern will work with the university supervisor and school principal on site-based assignments and will participate in periodic seminars related to the internship experience. Completion of the *School Management Case Study* will be required.

Candidates will be evaluated at the conclusion of EDU 5500 with the *North Carolina School Executive Evaluation Rubric for Preservice Candidates* and must demonstrate successful performance prior to enrolling in EDU 5600: *School Executive Internship III.*

EDU 5500a | School Executive Internship II Continuation (0)
If continued work is needed to fulfill activities/evidence completion as determined by a faculty/public school review team.

EDU 5600 | School Executive Internship III (3)
This course serves as the culmination of the internship experience and should be taken concurrently with the candidate's final specialty courses. Internship III is a 150 hour experience and includes the completion of the *Community Involvement and Engagement Action Plan* and the *School Culture and Safety Analysis*. A final presentation and evaluation of the candidate's performance using *Certification*

of Capacity and the *North Carolina School Executive Evaluation Rubric for Preservice Candidates* is required.

EDU 5600a | School Executive Internship III Continuation (0)
If continued work is needed to fulfill activities/evidence completion as determined by a faculty/public school review team.

SECONDARY MATHEMATICS COURSE DESCRIPTIONS

MTH 5001 | Historical Development of Mathematics (3)
The major mathematical developments from ancient times to the 21st century. The concept of mathematics, changes in that concept, and how mathematicians viewed what they were creating.

MTH 5002 | Combinatorics (3)
Basic principles of counting: addition and multiplication principles, enumeration techniques, including generating functions, recurrence formulas, rook polynomials, the principle of inclusion and exclusion, and Polya's theorem. This course will also cover basic concepts of graph theory: graphs, digraphs, connectedness, trees and graph colorings.

MTH 5003 | Graph Theory (3)
Basic concepts of graph theory. Trees and forests. Vector spaces associated with a graph. Representation of graphs by binary matrices and list structures. Traversability. Connectivity. Matchings and assignment problems. Planar graphs. Colorability. Directed graphs.

MTH 5004 | Linear Algebra (3)
Vector spaces. Bases and dimension. Changes of basis. Linear transformations and their matrices. Linear functionals. Simultaneous triangularization and diagonalization. Rational and Jordan canonical forms. Bilinear forms.

MTH 5005 | Matrix Theory (3)
Vector spaces, linear transformations and matrices, orthogonality, orthogonal transformations with emphasis on rotations and reflections, matrix norms, projectors, least squares, generalized inverses, definite matrices, singular values.

MTH 5006 | Modern Algebra for Secondary Teachers (3)
Applications of topics selected from groups, rings, fields, extensions, Euclidean domains, polynomials, vector spaces, and Galois theory.

MTH 5007 | Number Theory (3)
Introduction to elementary additive and multiplicative number theory, including divisibility properties of integers, congruence modulo n, linear and quadratic congruences, some Diophantine equations, distribution of primes, and additive arithmetic problems.

MTH 5008 | Geometry (3)
An introduction to axiomatic geometry including a comparison of Euclidean and non-Euclidean geometries.

MTH 5009 | Mathematical Models (3)
Development and application of probabilistic and deterministic models. Emphasis given to constructing models that represent systems in the social, behavioral, and management sciences.

MTH 5010 | Topology (3)
A study of the basic concepts of general topological space including such topics as compactness, connectedness, product spaces, metric spaces, and continuous functions.

MTH 5011 | Complex Variables (3)
Operations with complex numbers, derivatives, analytic functions, integrals, definitions and properties of elementary functions, multivalued functions, power series, residue theory and applications, conformal mapping.

MTH 5012 | Advanced Calculus for Secondary Teachers (3)
A proof-oriented development of important ideas in calculus. Topics will include metric spaces, limits and continuity, sequences and series, pointwise and uniform convergence, derivatives and integrals.

MTH 5013 | Probability and Statistics for Secondary Teachers (3)
An introduction to statistical reasoning and methodology emphasizing topics covered in the Advanced Placement Statistics examination. Topics include: descriptive statistics, basic probability, random variables and probability distributions, data collection, basic inference for means and proportions, two-sample problems for means and proportions, chi-square tests, and simple linear regression.

MTH 5040 | Special Topics (3)

MTH 5099 | Product of Learning (3)
A capstone course which connects the student's studies to contemporary issues and to the classroom situation.