

Department of Education
University of North Carolina-Asheville
Blueprint of 9-12 Science Programs

A. Description of the Proposed Program and Rationale for Changes

The following table compares the Education and Psychology courses in the old program and in the re-visioned 9-12 science licensure program. These courses are common to science licensure candidates in all four majors: Biology, Chemistry, Environmental Science (Earth Science concentration) and Physics.

Old Program	New Program
Education Courses	
EDUC 310 Introduction To Education, K-12 (3)	EDUC 210 Teaching and Learning in the 21 st Century, K-12 (4)
EDUC 311 Instructional Technology Laboratory (1)	EDUC 211 Instructional Applications of Information and Communications Technology, K-12 (1)
EDUC 314 Reading & Writing in the Content Area (3)	EDUC 314 Multiple Literacies for Content Area Instruction (3)
EDUC 382 Methods/Management in the Teaching of Science, 6-12 (4)	EDUC 382 Methods/Management in the Teaching of Science, 6-12 (4)
EDUC 396 Research Methods in Education, K-12 (1)	EDUC 327 Differentiated Assessment and Instruction, 6-12 (3)
EDUC 455 Student Teaching & Seminar, K-12 (6)	EDUC 455 Student Teaching & Seminar (8)
EDUC 496 Directed Research in Education, K-12 (2)	EDUC 456 The Teacher as a 21 st Century Professional, K-12 (4)
Psychology Series	
PSYC 101 General Psychology: Brain & Behavioral Processes (3) OR PSYC 102 General Psychology: Personality & Social Processes (3)	Content integrated in EDUC 210 and 327
PSYC 318 Psychology Applied to Teaching (4)	
27 hours, 9 classes	27 hours, 7 classes

The major requirements in each of the areas remain mostly unchanged. The few changes that have been made are a result of the elimination of EDUC 396/496 and are summarized in the table below.

Old Program	New Program
Biology Major	
Research requirement: BIOL 480: Senior Seminar <i>or</i> BIOL 498: Undergraduate Research in Biology <i>or</i> EDUC 396 and EDUC 496	BIOL 480: Senior Seminar <i>or</i> BIOL 498: Undergraduate Research in Biology
Chemistry Major	
Statement in catalog: “The chemistry research requirements and competency are satisfied by successfully completing EDUC 396/496 and earning a C or higher in CHEM 415”	CHEM 406, 407, 408: Chemical Literature Research I, II, and III (1 hr each) will be added to the course requirements.
Environmental Studies Major – Earth Science concentration	

Research requirement: ENVR 330: Seminar on Environmental Issues <i>or</i> EDUC 396 and EDUC 496	ENVR 330: Seminar on Environmental Issues
Physics Major	
No changes in physics major requirements.	

The new titles in the education courses reflect our commitment to reshape course content to reflect 21st Century Knowledge, Skills, and Dispositions. For the sake of brevity, this document will discuss the most extensive programmatic changes.

Changes Reflected in the New Program

- 1. EDUC 210** introduces the realities of 21st century schools and classrooms and enumerates the responsibilities of public school teachers. The course covers student diversity, including culture, language, gender, academic/cognitive ability, socioeconomic status, developmental levels, learning styles, multiple intelligences. It emphasizes personal, professional, and social responsibility with regard to diversity considerations and differentiated instruction. Course field experiences will require candidates to apply critical thinking and problem-solving skills to their observations of/interactions with diverse student populations. Other topics covered include: school law and accountability, particularly relative to meeting student needs; educational philosophy and self-reflection; school governance and finance.

Rationale for change: To deepen candidates’ understandings of the diversities they may encounter in their schools/classrooms, and to equip them with general practices used to differentiate instruction for students. This course will provide a framework for the increased emphasis on differentiation in subsequent classes. Candidates will demonstrate their leadership abilities, life skills, and ICT competency throughout course activities. To accommodate the amount of content in this course and to allow for a more extensive field placement, a fourth credit hour will be added. The course is also being renumbered to allow candidates to take it earlier in their programs.

- 2. EDUC 211** will be completely updated to reflect the latest Instructional and Communications Technologies available to public school teachers. Emphasis will be on practical application of the Computer Skills SCOS in the classroom. In addition to basic technologies (PowerPoint, spreadsheet, database), the course will cover smart boards, podcasting, Movie Maker, NC Wise, Skype, and other current applications.

Rationale for change: Technology coursework needs to be regularly updated to ensure that it is current. Feedback has shown that candidates are finding technologies in their schools that they have not encountered in this course in its current iteration. The course is also being renumbered to allow candidates to take it earlier in their programs.

- 3. EDUC 314**, “Multiple Literacies for Content Area Instruction,” focuses on the expanding parameters of literacy across content areas. It covers the processes of multiple meaning-making strategies and ways to process and communicate information. Emphasized areas include schema theory, teaching strategies, motivation, cooperative learning and integration of communication skills. Field Placement required.

Rationale for change: This redesigned course expands the emphasis on reading and writing processes to a wider range of language use and information sharing. Core topics are covered through the lens of differentiation of instruction.

4. **EDUC 327**, “Differentiated Assessment and Instruction, 6-12,” is a new course (parallel to EDUC 326 for K-6 licensure candidates) covering adolescent development, curricular assessment, and differentiated instruction. It gives particular emphasis to informal and standardized, formative and summative assessment. Candidates will conduct research into best instructional practices, and plan differentiated instruction of essential curricular content based on assessment. They will design a unit of instruction which is responsive to the School Improvement Plan and school- or district-wide initiatives.

Rationale for Change: To provide a more cohesive approach to assessment of student learning and address the emphasis on 21st Century Assessment in the public schools; to provide candidates with an opportunity to think critically about multiple aspects of student learning and to use data from assessments to drive instruction focusing on the needs of all students.

5. EDUC 396 and 496 have been replaced by **EDUC 456**: “The Teacher as a 21st Century Professional.” The new course is based on the premise that to continue to grow as a teacher-leader, teachers must (a) know their own strengths and weaknesses, and develop habits as lifelong professional learners, (b) know their students and the communities served by their schools, and (c) know their colleagues and other members of the profession. Candidates in EDUC 456 will create/implement their own professional development plan, engage with their students’ families and communities, and interact with peers and colleagues around current educational topics. To synthesize their learning, they will do extensive reflective writing about the activities in which they are engaged, the impact of their experiences on their own professional growth, and their plans for continued learning. Taken concurrently with EDUC 455.

Rationale for Change: To emphasize the need for candidates to be proactive in their professional development and in their interactions with colleagues, students’ families, and the educational community as a whole.

6. **EDUC 455** has been increased from 6 to 8 credit hours.

Rationale for Change: Candidates will extend their twelve-week clinical experience through pre-clinical and post-clinical observation, professional development activities, and reflection. Changing the student teaching semester coursework (EDUC 455 and 456 together) to full time will not only reflect the work that candidates do but will also help with issues of insurance and financial aid.

7. PSYC 101/102 and 318 have been eliminated from the program. The content from PSYC 318 has been redistributed across EDUC 210 and EDUC 327.

Rationale for Change: To eliminate redundancy and reduce program length.

8. **EDUC 382**, “Methods/Management in the Teaching of Science, 6-12,” is undergoing a re-design.

Rationale for Change: Re-designing course assignments and content is necessary to assure program alignment with the newly adopted science specialty area standards. In addition, examining and re-designing the course will allow for elimination of redundancy with the new assessment course, EDUC 327.

9. Changes in **science major requirements** are outlined in the table above.

Rationale for Change: Three of the four majors used EDUC 396/496 to fulfill requirements related to research. Since these courses are being eliminated, the major departments have adjusted their

requirements to fulfill the research competency in other ways. Courses within the major were also examined with regard to the new specialty area standards, particularly Standard 2: *Science teacher candidates understand and are able to use the unifying concepts of science in their instruction*, and were found to align well.

B. Public School Partner Involvement in the 9-12 Science Re-Envisioning Process

Public school partners, arts and sciences faculty members, program alumni, and current students have played an integral role in the re-envisioning of the 9-12 Science licensure program at UNCA, providing input into the re-design of the program.

The program was re-designed in two phases. In the first phase, all faculty in the UNCA Department of Education worked with public school partners, arts and sciences liaisons, program alumni, and current students to identify district-level initiatives, review the new standards and program accreditation criteria, and discuss ideas for unit-wide changes.

Phase One: Focus on Unit-Wide Changes

- Teacher Focus Group (September 23, 2008): Cooperating teachers for all subjects/grade levels were oriented to the new program expectations and then discussed ideas for unit-wide and program changes.
- USTEC Retreat (October 28, 2008): Teachers and administrators from partner districts identified shared goals and brainstormed ideas for unit-wide program revision.
- Arts and Sciences Liaisons (October 30, 2008): Education faculty met with A&S faculty to explain implications of the re-visioning process for major departments. A&S faculty input was solicited.
- USTEP Initial Preparation Subcommittee (December 1, 2008): Public school teachers and administrators met with department faculty and current and former students to discuss possible changes to the core requirements.
- Teacher Focus Group (December 4, 2008): Cooperating teachers for all subjects/grade levels discussed ideas for electronic evidences and program design.
- USTEP Initial Preparation Subcommittee (February 2, 2009): Committee members met to discuss the newly-designed core courses and the associated new evidences. After extensive discussion, all committee members agreed that the new core courses effectively reflect the new standards.
- Education and clinical faculty met in two learning circles on Differentiated Instruction, February 10 and 18, 2009. Discussion further supported planning of new course on assessment and differentiated instruction. Participants began consideration of course design.
 - Using feedback from public school partners, department faculty voted to accept the recommendations for the new core (February 3, 2009)
 - Teacher Focus Group (May 5, 2009): Discussion of Evidences Five and Six with clinical faculty and current candidates.

Phase Two: Focus on 9-12 Science Program-Specific Changes

- Science Initiative meeting with 6-9 science teachers (Feb. 9, 2009)
- Meetings and discussions with clinical teachers serving as student teaching cooperative teachers (spring semester, 2009)
- Webinar discussion with program representatives from institutions across NC (Mar. 3, 2009)
- Meetings and discussions with science department liaisons from the departments of Biology, Chemistry, Environmental Science, and Physics (April - May, 2009)

Phase Three: Delivery and Evaluation

Once the program has been implemented, public school partners will be involved in its delivery and evaluation in several ways. Clinical teachers will serve as consultants in the development and delivery of the new classes, particularly EDUC 314 and 327, serving as guest lecturers and/or team teachers with university faculty. Further, public school personnel will be invited to lead and/or participate in the professional development discussions and seminars occurring during EDUC 456.

The program coordinator and the Liaisons from the Departments of Biology, Chemistry, Environmental Science and Physics will meet regularly, following implementation, to evaluate the effectiveness of the program. Others involved with evaluation will include cooperating teachers, ILTs, employers, and program completers. Regular focus groups (generally held at cooperating teacher training sessions every semester) will give us up-to-date input from cooperating teachers who work with our students as we are transitioning to the new program.

C. Electronic Evidences and Standards

Section I provides a brief description of each evidence and the descriptors of the element of the standards it addresses.

SECTION I: KEY EVIDENCES

Evidence		Name of Evidence	Briefly Describe the Evidence	Descriptors of the Elements of the Standards Addressed by the Evidence
1	Content Knowledge: Evidence that demonstrates breadth of content knowledge in the specialty area.	Transcript or Praxis II scores	Copy of transcript with at least 24 semester hours of coursework relevant to the specialty area from a regionally accredited college or university with a grade of C (2.0) or better in each of the 24 hours OR satisfactory Praxis II score.	3b.1. Demonstrates an appropriate level of content knowledge in the teaching specialty.
2	Content Knowledge: Evidence that demonstrates candidate depth of understanding and application of content knowledge in the specialty area.	Research Paper	As part of an upper level course in the major, each candidate will complete an in-depth research paper on a specific topic related to the major.	3b.1. Demonstrates an appropriate level of content knowledge in the teaching specialty.
3	Pedagogical and Professional Knowledge Skills and Dispositions: Evidence that demonstrates effective design of classroom instruction based on research-verified practice.	Unit Plan	In consultation with their cooperating teacher, candidates will create a 5-day integrated thematic teaching unit. They will create a rationale for the unit, provide the situational context, and provide lesson plans to include objectives, procedures, differentiation strategies, and assessment. The unit will include at least one lesson utilizing technology and one that uses student learning	<p>2b.3. Understands the influence of diversity and plans instruction accordingly.</p> <p>2d.1. Cooperates with specialists and uses resources to support the special learning needs of all students.</p> <p>3a.1. Develops and applies lessons based on the <i>North Carolina Standard Course of Study</i>.</p> <p>3c.1. Demonstrates knowledge of links between grade/subject and the <i>North Carolina Standard Course of Study</i> by relating content to other disciplines.</p> <p>3c.2. Relates global awareness to the subject.</p> <p>3d.1. Integrates 21st century skills and content in instruction.</p> <p>4a.1. Identifies developmental levels of individual students and plans instruction accordingly.</p> <p>4a.2. Assesses and uses resources needed to address strengths and weaknesses of students.</p> <p>4b.1. Collaborates with colleagues to monitor student performance and make instruction responsive to cultural differences and individual learning needs.</p> <p>4c.1. Uses a variety of appropriate methods and materials to meet the needs of all students.</p> <p>4d.1. Integrates technology with instruction to maximize students' learning.</p> <p>4e.1. Integrates specific instruction that helps students develop the ability to apply processes and strategies for critical thinking and problem solving.</p>

			teams. Candidates will reflect on each lesson taught.	<p>4f.1. Organizes student learning teams for the purpose of developing cooperation, collaboration, and student leadership.</p> <p>5c.1. Uses a variety of research-verified approaches to improve teaching and learning.</p>
4	<p>Pedagogical and Professional Knowledge Skills and Dispositions: Evidence that demonstrates knowledge, skills, and dispositions in practice.</p>	LEA/IHE Certification of Teaching Capacity	State-required evaluation of the candidate completed by the institution and the cooperating teacher.	<p>1a.1. Evaluates the progress of students toward high school graduation using a variety of assessment data measuring goals of the <i>North Carolina Standard Course of Study</i>.</p> <p>1a.3. Maintains a safe and orderly classroom that facilitates student learning.</p> <p>1a.4. Uses positive management of student behavior, including strategies of conflict resolution and anger management, effective communication for defusing and deescalating disruptive or dangerous behavior, and safe and appropriate seclusion and restraint.</p> <p>1d.1. Implements and adheres to policies and practices positively affecting students' learning.</p> <p>1e.1. Upholds the <i>Code of Ethics for North Carolina Educators</i> and the <i>Standards for Professional Conduct</i>.</p> <p>2a.1. Maintains a positive and nurturing learning environment.</p> <p>2b.1. Appropriately uses materials or lessons that counteract stereotypes and acknowledges the contributions of all cultures.</p> <p>2b.2. Incorporates different points of view in instruction.</p> <p>2c.1. Maintains a learning environment that conveys high expectations of every student.</p> <p>2d.1. Cooperates with specialists and uses resources to support the special learning needs of all students.</p> <p>2d.2. Uses research-verified strategies to provide effective learning activities for students with special needs.</p> <p>3a.2. Integrates effective literacy instruction throughout the curriculum and across content areas to enhance students' learning.</p> <p>3b.2. Encourages students to investigate the content area to expand their knowledge and satisfy their natural curiosity.</p> <p>3d.1. Integrates 21st century skills and content in instruction.</p> <p>4c.1. Uses a variety of appropriate methods and materials to meet the needs of all students.</p> <p>4d.1. Integrates technology with instruction to maximize students' learning.</p> <p>4e.1. Integrates specific instruction that helps students develop the ability to apply processes and strategies for critical thinking and problem solving.</p> <p>4f.1. Organizes student learning teams for the purpose of developing cooperation, collaboration, and student leadership.</p> <p>4g.1. Uses a variety of methods to communicate effectively with all students.</p> <p>4g.2. Consistently encourages and supports students to articulate thoughts and ideas clearly and effectively.</p> <p>4h.1. Uses multiple indicators, both formative and summative, to monitor and evaluate students' progress and to inform instruction.</p> <p>4h.2. Provides evidence that students attain 21st century knowledge, skills and dispositions.</p> <p>5a.1. Uses data to provide ideas about what can be done to improve students' learning.</p>

Evidence		Name of Evidence	Briefly Describe the Evidence	Descriptors of the Elements of the Standards Addressed by the Evidence
5	Positive Impact on Student Learning: Evidence that demonstrates impact on student learning.	Instructional Unit Project: Assessment Focus	Candidates complete a pre-teaching assessment of students' knowledge/skills in some aspect of the course content. They plan and implement instruction, use formative assessment, differentiate instruction, reteach as necessary and complete summative assessments.	<p>1a.1. Evaluates the progress of students toward high school graduation using a variety of assessment data measuring goals of the <i>North Carolina Standard Course of Study</i>.</p> <p>1a.2 Draws on appropriate data to develop classroom and instructional plans.</p> <p>4h.1. Uses multiple indicators, both formative and summative, to monitor and evaluate students' progress and to inform instruction.</p> <p>4h.2. Provides evidence that students attain 21st century knowledge, skills and dispositions.</p> <p>5a.1. Uses data to provide ideas about what can be done to improve students' learning.</p>
6	Leadership and Collaboration: Evidence that demonstrates leadership and collaboration.	Professional Development (Self, Learner, Community) Project	Candidates will create a professional development plan and undertake activities designed to (a) strengthen their understandings of their own professional strengths and weaknesses and allow them to further develop particular areas; (b) become more deeply acquainted with their students' interests, families, living situations and work toward positive family/community contacts; and (c) consider educational issues/topics with their peers at UNCA, in their assigned schools, and at other universities.	<p>1b.1. Engages in collaborative and collegial professional learning activities.</p> <p>1b.2. Identifies the characteristics or critical elements of a school improvement plan.</p> <p>1b.3. Displays the ability to use appropriate data to identify areas of need that should be addressed in a school improvement plan.</p> <p>1c.1. Participates in professional development and growth activities.</p> <p>1c.2. Begins to develop professional relationships and networks.</p> <p>2e.1. Communicates and collaborates with the home and community for the benefit of students.</p> <p>5b.1. Participates in recommended activities for professional learning and development.</p>

SECTION II: RELATIONSHIP OF THE EVIDENCE TO THE STANDARDS

The following matrix links each descriptor of each element of the standards to the key evidence(s) addressing it.

NORTH CAROLINA TEACHER STANDARD	KEY EVIDENCE(S) FROM SECTION I DEMONSTRATING THE DESCRIPTORS OF THE ELEMENTS
1. TEACHERS DEMONSTRATE LEADERSHIP	
a. Teachers lead in their classrooms. <ol style="list-style-type: none"> 1. Evaluates the progress of students toward high school graduation using a variety of assessment data measuring goals of the North Carolina Standard Course of Study. 2. Draws on appropriate data to develop classroom and instructional plans. 3. Maintains a safe and orderly classroom that facilitates student learning. 4. Uses positive management of student behavior, effective communication for defusing and deescalating disruptive or dangerous behavior, and safe and appropriate seclusion and restraint. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
b. Teachers demonstrate leadership in the school. <ol style="list-style-type: none"> 1. Engages in collaborative and collegial professional learning activities. 2. Identifies the characteristics or critical elements of a school improvement plan. 3. Displays the ability to use appropriate data to identify areas of need that should be addressed in a school improvement plan. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
c. Teachers lead the teaching profession. <ol style="list-style-type: none"> 1. Participates in professional development and growth activities. 2. Begins to develop professional relationships and networks. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>

NORTH CAROLINA TEACHER STANDARD	KEY EVIDENCE(S) FROM SECTION I DEMONSTRATING THE DESCRIPTORS OF THE ELEMENTS
d. Teachers advocate for schools and students. 1. Implements and adheres to policies and practices positively affecting students' learning.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
e. Teachers demonstrate high ethical standards 1. Upholds the <i>Code of Ethics for North Carolina Educators</i> and the <i>Standards for Professional Conduct</i> .	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
2. TEACHERS ESTABLISH A RESPECTFUL ENVIRONMENT FOR A DIVERSE POPULATION OF STUDENTS	
a. Teachers provide an environment in which each child has a positive, nurturing relationship with caring adults. 1. Maintains a positive and nurturing learning environment.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
b. Teachers embrace diversity in the school community and in the world. 1. Appropriately uses materials or lessons that counteract stereotypes and acknowledges the contributions of all cultures. 2. Incorporates different points of view in instruction. 3. Understands the influence of diversity and plans instruction accordingly.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8 <input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8 <input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
c. Teachers treat students as individuals. 1. Maintains a learning environment that conveys high expectations of every student.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
d. Teachers adapt their teaching for the benefit of students with special needs. 1. Cooperates with specialists and uses resources to support the special learning needs of all students.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8

NORTH CAROLINA TEACHER STANDARD	KEY EVIDENCE(S) FROM SECTION I DEMONSTRATING THE DESCRIPTORS OF THE ELEMENTS
2. Uses research-verified strategies to provide effective learning activities for students with special needs.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
e. Teachers work collaboratively with the families and significant adults in the lives of their students. 1. Communicates and collaborates with the home and community for the benefit of students.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
3. TEACHERS KNOW THE CONTENT THEY TEACH	
a. Teachers align their instruction with the <i>North Carolina Standard Course of Study</i>. 1. Develops and applies lessons based on the <i>North Carolina Standard Course of Study</i> . 2. Integrates effective literacy instruction throughout the curriculum and across content areas to enhance students' learning.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8 <input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
b. Teachers know the content appropriate to their teaching specialty. 1. Demonstrates an appropriate level of content knowledge in the teaching specialty. 2. Encourages students to investigate the content area to expand their knowledge and satisfy their natural curiosity.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8 <input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
c. Teachers recognize the interconnectedness of content areas/discipline. 1. Demonstrates knowledge of links between grade/subject and the <i>North Carolina Standard Course of Study</i> by relating content to other disciplines. 2. Relates global awareness to the subject.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8 <input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
d. Teachers make instruction relevant to students. 1. Integrates 21 st century skills and content in instruction.	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8

NORTH CAROLINA TEACHER STANDARD	KEY EVIDENCE(S) FROM SECTION I DEMONSTRATING THE DESCRIPTORS OF THE ELEMENTS
4. TEACHERS FACILITATE LEARNING FOR THEIR STUDENTS	
<p>a. Teachers know the ways in which learning takes place, and they know the appropriate levels of intellectual, physical, social, and emotional development of their students.</p> <p>1. Identifies developmental levels of individual students and plans instruction accordingly.</p> <p>2. Assess and uses resources needed to address strengths and weaknesses of students.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>b. Teachers plan instruction appropriate for their students.</p> <p>1. Collaborates with colleagues to monitor student performance and make instruction responsive to cultural differences and individual learning needs.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>c. Teachers use a variety of instructional methods.</p> <p>1. Uses a variety of appropriate methods and materials to meet the needs of all students.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>d. Teachers integrate and utilize technology in their instruction.</p> <p>1. Integrates technology with instruction to maximize students' learning.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>e. Teachers help students develop critical-thinking and problem-solving skills.</p> <p>1. Integrates specific instruction that helps students develop the ability to apply processes and strategies for critical thinking and problem solving.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>f. Teachers help students to work in teams and develop leadership qualities.</p> <p>1. Organizes student learning teams for the purpose of developing cooperation, collaboration, and student leadership.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>

NORTH CAROLINA TEACHER STANDARD	KEY EVIDENCE(S) FROM SECTION I DEMONSTRATING THE DESCRIPTORS OF THE ELEMENTS
<p>g. Teachers communicate effectively.</p> <ol style="list-style-type: none"> 1. Uses a variety of methods to communicate effectively with all students. 2. Consistently encourages and supports students to articulate thoughts and ideas clearly and effectively. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>h. Teachers use a variety of methods to assess what each student has learned.</p> <ol style="list-style-type: none"> 1. Uses multiple indicators, both formative and summative, to monitor and evaluate students' progress and to inform instruction. 2. Provides evidence that students attain 21st century knowledge, skills and dispositions. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p> <p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>5. TEACHERS REFLECT ON THEIR PRACTICE</p>	
<p>a. Teachers analyze student learning.</p> <ol style="list-style-type: none"> 1. Uses data to provide ideas about what can be done to improve students' learning. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>b. Teachers link professional growth to their professional goals.</p> <ol style="list-style-type: none"> 1. Participates in recommended activities for professional learning and development. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>c. Teachers function effectively in a complex, dynamic environment.</p> <ol style="list-style-type: none"> 1. Uses a variety of research-verified approaches to improve teaching and learning. 	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>

SECTION III: DETAILED DESCRIPTION OF THE EVIDENCES

#1 Required (State prescribed)

Content Knowledge: Evidence that demonstrates breadth of content knowledge in the specialty area.

A transcript OR passing scores on the appropriate Praxis II test(s) must be submitted. This evidence must address descriptor 3b.1.

I. Name of Evidence: Transcript

II. Specific Requirements: Candidates must complete a major in Biology, Chemistry, Environmental Studies (Earth Science concentration), or Physics, and complete licensure course work which covers the full range of competencies required for 9-12 Science Licensure. Students obtaining licensure in 9-12 Comprehensive Science in addition to the individual area of biology, chemistry, earth science or physics must complete additional courses.

III. How the Evidence Addresses the Descriptors: UNCA does not offer an “education major”; science teacher candidates complete a major in a science area in addition to taking the required series of education courses. The major provides candidates with an excellent breadth and depth of content knowledge in the specialty area. Candidates demonstrate their breadth of knowledge by achieving a grade of C or better in their major and licensure course work. The 9-12 Science licensure program of study has been carefully reviewed to ensure that all specialty area standards and the content areas outlined in the NCSCS are being addressed, either by particular courses, series of courses, or competency-based activities within courses.

IV. How the Evidence Is Evaluated: Candidates must meet university and departmental grade, hour, and competency requirements. Candidates must have a C or better on 24 hours of the major coursework. Data are gathered by Institutional Research and evaluated by the 9-12 Science licensure program coordinator.

#2 Required

Content Knowledge: Evidence that demonstrates candidate depth of understanding and application of content knowledge in the specialty area.

This evidence must address descriptor 3b.1.

I. Name of Evidence: Research Paper

II. Specific Requirements:

In each of the majors associated with science licensure, students are required to complete a content-based research paper in an upper-level course. The courses in each major that require an in-depth research paper are the following:

Biology: BIOL 480 Senior Seminar *or* BIOL 498 Undergraduate Research in Biology

Chemistry: CHEM 336 Bio-Organic Chemistry

Earth Science: ENVR 330 Seminar on Environmental Issues

Physics: PHYS 326 Modern Physics

These courses are required of all majors, including the licensure students, in the respective areas. All of the courses listed above except PHYS 326 are designated “Writing Intensive” in the university curriculum. The physics department has not pursued such designation for PHYS 326 but students are required to research and write a significant paper.

Post-bac students may submit a paper completed during their undergraduate course of studies to be evaluated or take the appropriate course listed above.

III. How the Evidence Addresses the Descriptors:

In each of the majors, the research paper assignment requires students to demonstrate depth of understanding in a topic within their specialty area informed by a broad understanding and knowledge base from the major. To successfully complete the assignment, they must think critically, synthesize information from various sources, and draw conclusions. In addition to conducting the research, students must communicate their ideas effectively, and use scientific format, language and citations appropriately.

IV. How the Evidence Is Evaluated:

Each paper will be evaluated according to the standards and requirements given by the course instructor. Then it will be submitted to the major department’s liaison to the education department and the science licensure coordinator, who will further evaluate it based on a common rubric. The rubric will be designed by the liaisons and the coordinator and will emphasize the extent to which the paper demonstrates depth of understanding and the ability to apply content knowledge. In addition, the rubric will include quality of writing, organization, format, and the extent to which the paper successfully fulfilled the assignment.

#3 Required

Pedagogical and Professional Knowledge Skills and Dispositions: Evidence that demonstrates effective design of classroom instruction based on research-verified practice.

It is recommended this evidence address descriptors 1a.2, 2b.3, 2d.1, 3a.1, 3c.1, 3c.2, 3d.1, 4a.1, 4a.2, 4b.1, 4c.1, 4d.1, 4e.1, 4f.1, 5c.1.

Descriptors addressed IF different from those recommended: 2b.3, 2d.1, 3a.1, 3c.1, 3c.2, 3d.1, 4a.1, 4a.2, 4b.1, 4c.1, 4d.1, 4e.1, 4f.1, 5c.1

I. Name of Evidence: Integrated Thematic Unit Plan

II. Specific Requirements: Candidates will design and implement a five-day integrated thematic teaching unit. They will select the unit plan topic in consultation with their cooperating teacher, and teach at least 3 lessons from the plan during their field placement. Requirements of the unit plan include:

1. situational context, providing information about the school, the classroom, and the students, with an explanation of how these factors will affect planning and teaching;
2. rationale, purpose and objectives of the unit, including the NCSCS goals and objectives addressed;
3. pre-teaching assessment using concepts learned in EDUC 327;
4. study of school services completed by interviewing individuals at the school;
5. a description of how technology will be used in the unit;
6. an overview plan for meeting the need of diverse learners;
7. a time-frame with a day-by-day calendar of activities;
8. 5 daily lesson plans, including at least one lab activity, one use of instructional technology, one use of student learning teams, cross-curricular connections, and accommodations for meeting the needs of diverse learners;
9. assessment plan describing both formative and summative assessments and addressing a variety of cognitive levels and multiple intelligences;
10. reflection, to be completed after teaching a portion of the unit.

III. How the Evidence Addresses the Descriptors:

- 2b.3: Students must first analyze the diversity in their schools and classrooms for instructional implications. They will then administer the pre-assessment, which will provide them information about specific student knowledge on the unit topic. They are required to specify differentiated instructional strategies as part of the plan, implement these strategies, and reflect on their effectiveness.
- 2d.1: Candidates will conduct a Study of School Services which requires them to interview various specialists and resource people in the school. They will then write a summary of the experience, reflecting on how they will use what they have learned to assist them as they design and implement the unit.
- 3a.1: All lessons must be aligned with the *North Carolina Standard Course of Study*. Objectives are specified.
- 3c.1: The unit must involve cross curricular integration by relating content to other disciplines. Candidates are observed by their course instructor and cooperating teacher to see that this integration is accomplished successfully in practice. This integration is also reflected in the field placement assessment.
- 3c.2: Candidates are required to relate content to larger global issues in order to provide a wider context for learning.
- 3d.1: Candidates are required to indicate in the objectives for their lesson plans which 21st Century skills and content the lesson/unit address.
- 4a.1: Candidates must discuss the developmental levels of their students in their plans for differentiated instruction.
- 4a.2: As part of their analysis of the pre-assessment results, candidates must give an explanation of the relationship between their assessment data and the unit resources they will use.
- 4b.1: Cooperating teachers and candidates will work together to assess monitoring, culturally relevant teaching, and differentiation. These topics will be covered in the candidate's daily reflections and will be evaluated on the clinical placement assessment form to be completed by the cooperating teacher. Further, in conducting the Study of School Services, candidates will collaborate with school personnel who can advise them on making their lessons responsive to individual student needs.
- 4c.1: Lesson plans must demonstrate a variety of methods and materials as evidenced by the unit rubric.
- 4d.1: Every candidate must include instructional technology as an aspect of their unit.
- 4e.1: Lesson plan objectives and procedures are evaluated for higher-order thinking skills and levels of questioning. This indicator is further assessed as part of the final field placement assessment.
- 4f.1: Candidates must include the use of student learning teams as an aspect of their unit.
- 5c.1: In their reflections on instruction, candidates must use scholarly literature to defend their use of particular teaching practices. This element will be assessed in the rubric for the unit.

IV. How the Evidence Is Evaluated: Units are evaluated by means of a comprehensive unit rubric. All candidates must score at standard or above on each element of the unit rubric in order to successfully complete the unit plan. This is a requirement for candidates to meet for the Decision Point which is assessed before they are allowed to continue to student teaching. Candidates' teaching is observed and evaluated by their cooperating teacher and by the course instructor using a common rubric.

#4 Required (State-prescribed)

Pedagogical and Professional Knowledge Skills and Dispositions: Evidence that demonstrates knowledge, skills, and dispositions in practice.

This evidence must be the state-approved LEA/IHE Certification of Teaching Capacity.

Descriptors addressed: 1a.1, 1a.3, 1a.4, 1d.1, 1e.1, 2a.1, 2b.1, 2b.2, 2c.1, 2d.1, 2d.2, 3a.2, 3b.2, 3d.1, 4c.1, 4d.1, 4e.1, 4f.1, 4g.1, 4g.2, 4h.1, 4h.2, 5a.1

I. Name of Evidence: LEA/IHE Certification of Teaching Capacity

II. Specific Requirements: The cooperating teacher, the university supervisor, and the candidate will work together to complete the Student Teaching Exit Criteria, which will include the LEA/IHE Certification of Teaching Capacity.

III. How the Evidence Addresses the Descriptors: As set out by NCDPI

IV. How the Evidence Is Evaluated: All candidates will be required to score at the "Proficient" level on all indicators on the LEA/IHE Certification of Teaching Capacity.

#5 Required

Positive Impact on Student Learning: Evidence that demonstrates impact on student learning.

It is recommended this evidence address descriptors 1a.1, 4b.1, 4h.1, 4h.2, 5a.1.

Descriptors addressed IF different from those recommended: 1a.1, 1a.2, 4h.1, 4h.2, 5a.1

I. Name of Evidence: Assessing, Teaching, Differentiating: Unit-Based Instruction

II. Specific Requirements:

During the student teaching semester prior to beginning instruction, candidates design and administer an appropriate technology-based pre-teaching assessment on some aspect of course content. The assessment reflects SCS goals and objectives, is developmentally appropriate, taps multiple levels of thinking, and meets the needs of the particular class of students.

Candidates analyze the results, considering the performance of their students as a whole, and as members of NCLB subgroups, and use the information to plan instruction to meet the needs of all learners. During the instruction period, formative assessments are administered and re-teaching with alternate methods is implemented. Summative assessment shows the impact of differentiated instruction on student learning. Candidates reflect on the process, the variety of assessments, and the results.

III. How the Evidence Addresses the Descriptors

1a.1: Candidates' final report requires them to reflect upon the notion that all teachers are responsible for moving students toward high school graduation. Candidates will have to relate their experiences with assessment, teaching, and differentiation at this grade level/subject to students' eventual progress through high school.

1a.2: Candidates will utilize the results of their pre-teaching assessments to plan their unit and the results of their post-teaching assessments to develop their plans for differentiation.

4h.1: Candidates will utilize the results of the pre-teaching assessment and of formative assessment during the unit to plan and deliver the lessons. They must explain their data-driven decisions in their discussion of their pre-teaching assessment, in their lesson reflections, and in their post-assessment write-ups.

4h.2: Candidates must speak to their students' progress toward 21st century knowledge, skills, and dispositions in their pre- and post-assessment write-ups and in their lesson reflections.

5a.1: In their discussions for this project, candidates must make a direct link between their data and their ideas for improving their teaching and their students' learning.

IV. How the Evidence Is Evaluated

The evidence will be assessed by the university supervisor or instructor of EDUC 456 using a rubric which matches the template for this assignment.

#6 Required

Leadership and Collaboration: Evidence that demonstrates leadership and collaboration.

It is recommended this assessment address descriptors 1b.1, 1b.2, 1b.3, 1c.1, 1c.2, 2e.1, 5b.1.

Descriptors addressed IF different from those recommended: 1b.1, 1b.2, 1b.3, 1c.1, 1c.2, 2e.1, 5b.1

I. Name of Evidence: Professional Development Project: Self, Learner, Community

II. Specific Requirements:

As 21st-Century professionals, candidates must know:

- their students, their families, and the community served by the school,
- their colleagues, and
- themselves, including their own strengths and weaknesses, both personally and professionally.

Candidates will assess their knowledge of themselves, their colleagues, their students, and the greater community in which they teach, including the global community of which the language and cultures they teach are a part. They will create a plan for professional development to extend their knowledge in each area. Some activities will be required, while others will be chosen by the individual candidate. They will implement the plan during the student teaching semester, reflect on their overall development at the end of the semester, and plan for the next phase of professional development.

III. How the Evidence Addresses the Descriptors

1b.1: Several activities in which the candidates engage require them to engage collegially and collaboratively with other members of the educational community. They will participate in the discussion of professional literature with peers at UNCA and at other institutions; they will attend school-based professional development activities; they will attend regular seminars with peers to discuss educational issues and topics.

1b.2: Candidates must obtain the school improvement plan, identify the critical elements, and compare it to the plans from their peers' schools, identifying commonalities and differences.

1b.3: Candidates must consider the data from their students' performance and recommend areas that might need to be addressed in a school improvement plan.

1c.1: Candidates will identify areas in which they need additional professional development and then participate in several relevant professional growth activities.

1c.2: Candidates will interact with peers at UNCA and at other universities to discuss relevant aspects of professional development. Our current partnership with Winston-Salem State gives candidates the opportunity to get to know peers whose backgrounds and experiences vary from their own. Candidates will engage in professional conversations using technology (wikis, blogs, teleconferencing).

2e.1: Candidates will complete activities that engage them with students' families and communities. They will participate in parent-teacher conferences and IEP meetings as appropriate, ride the school bus to become familiar with the neighborhoods served by their school, maintain records of contact with families, and give evidence of ways in which they have communicated with family and community members.

5b.1: Each candidate will create an individual professional development plan and participate in appropriate activities. They will then give evidence of applying their new learning in their student teaching situation and reflect on its effectiveness; further, they will identify areas in which they need further study.

IV. How the Evidence is Evaluated: Candidate responses will be evaluated using a common rubric.

D. Timeline for Implementation

- 2008-2009 School Year: Devise new program; meet with liaisons in science departments
- Summer, 2009: Devise new curriculum for EDUC 211
- April-September, 2009: Prepare documents required to institute changes at UNCA
- August-December, 2009: Revise and pilot changes in EDUC 382
- August/September, 2009: Receive feedback from NCDPI
- September – December, 2009: Submit APC documents seeking university approval of changes; revise blueprint according to DPI feedback; develop rubrics for Evidences 2, 3, 5, & 6
- Spring 2010: All future “contracts” for candidates will follow the new program as appropriate.
- Fall 2010: Full implementation of new program, including EDUC 327 and 456.