

THE CITADEL

REQUESTING TO MODIFY AN EXISTING PROGRAM

Bachelor of Science in Biology

**Adding a Teaching Specialization in Biology and Comprehensive/Broad
Field Science**

Institutional Contact

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John W. Rosa
Lieutenant General, USAF (Retired)
President

Program Title:

Bachelor of Science in Biology with a Teaching Specialization in Biology and Comprehensive/Broad Field Science

Academic Units:

Department of Biology
School of Education

Designation:

4-year Baccalaureate Degree

Proposed Date of Implementation:

Fall 2009

CIP Code:

260101

Modification:

Modification of the Bachelor of Science in Biology to add a Teaching Specialization in Biology and Comprehensive/Broad Field Science

Program qualifies for supplemental Palmetto Fellows Scholarship and LIFE Scholarship awards: Yes No:

Delivery mode:

Traditional; On-Campus

Justification:

The Citadel proposes to “reestablish” an undergraduate teacher preparation program in Biology and Comprehensive/Broad Field Science for members of the South Carolina Corps of Cadets. This program modification is the collaborative effort of the Departments of Biology, Chemistry, and Physics and the School of Education and is part of a larger Citadel initiative to enhance teaching and learning of the STEM disciplines in the Lowcountry and beyond.

The Teaching Specialization in Biology and Comprehensive/Broad Field Science within the B.S. in Biology is designed specifically to provide students with the content and pedagogy necessary to fill positions in the critical needs area of Biology and Comprehensive/Broad Field Science. This effort to reestablish an undergraduate teacher preparation program in Biology is part of a larger initiative aimed at making The Citadel a recognized leader for science, technology, engineering, and mathematics (STEM) education in South Carolina.

Recent national studies and reports indicate that erosion of educational programs in the STEM disciplines pose a serious threat to the economic competitiveness of our nation and region. One report in particular (*An American Imperative: Transforming the Recruitment, Retention, and Renewal of Our Nation’s Mathematics and Science Teaching Workforce*) asserts that “we must act decisively today to recruit, retain, and renew exceptional mathematics and science teachers.” It is—as part of a larger effort to enhance mathematics and science literacy in the region—that we seek to reestablish the cadet secondary teacher preparation program in Biology at The Citadel. While the teaching track in Biology within the B.S. in Education has been less than successful in attracting students in the past, we believe that identifying the teaching specialization with the content area will be more attractive to our students. In addition, students electing this teaching field will be eligible for supplemental funding through the Life Scholarship and Palmetto Fellows Programs, and The Citadel is seeking private funds to provide scholarships and grants to attract students into this program that will prepare them to enter the teaching profession in a critical needs area.

By definition, too few teachers are being produced in critical need content areas. This teaching specialization will require that we add only two new courses, 1) Methods and Applications of Science; and 2) Introduction to Earth Science. These new offerings will be taught by current staff and will not require additional faculty lines. All other courses in the teaching specialization are already available and being used in other majors. This means that with only the expense of addressing these two new courses, The Citadel will be able to provide the opportunity for cadets to complete a teaching specialization in Biology and Broad Field/Comprehensive Science. The Citadel is committed to a serious effort to contribute to addressing critical needs areas for teachers in South Carolina, and

we are asking your support in implementing this program that is aimed at addressing one of those critical needs areas.

Need:

A discussion of the need for the program in the state, including but not limited to student demand or interest, anticipated employment opportunities for graduates, or demand for services, which must be quantified to the maximum extent possible, cover a reasonable period in the future beyond the anticipated date of graduation of the first classes, and must include sources of data.

TO BE PROVIDED

Centrality of the program to the mission of the institution:

The Citadel has a long history of providing its students opportunities for strong preparations for careers in teaching at the secondary level, through both undergraduate and graduate programs. When The Citadel decided to reorganize its academic programs and establish schools, the School of Education was the first school established. Through this program modification, The Citadel is attempting to rejuvenate a waning student interest in teaching in the sciences and to make those students who are interested in careers related to their biology major aware of opportunities to combine their interest in biology with a rewarding career and an opportunity to render service, a central theme of the principled leadership educational experience provided by The Citadel.

Relationship of the proposed program to other related programs within the institution:

Several years ago, in preparation for NCATE reaccreditation, the decision was made to drop Biology as a Teaching Field within the Bachelor of Science in Education. This decision was made with considerable reluctance. It was our concern that with such a limited number of graduates from this program, NCATE would feel that we had not been able to amass sufficient assessment data to document that the program was indeed meeting NCATE accreditation expectations. Our thought at that time was that low numbers of graduates should be an expectation since this was a critical needs area and if the program were closed, there would be no opportunity to produce teachers. None the less, the program was closed in an effort to protect our overall NCATE accreditation. After revisiting this matter, we have decided that our initial position to retain this program was correct, and we wish to correct our past action with the establishment of this different approach to preparing students to enter this critical needs teaching area. The Departments of Biology, Chemistry, and Physics and the School of Education-- recognizing the critical need for well-trained secondary school biology teachers—are committed to providing a program leading to

certification in Biology and Comprehensive/Broad Field Science. Again, this opportunity will address a critical need of the State while adding no additional costs to the State

Duplication of Existing Programs:

The Citadel's proposed Teaching Specialization in Biology and Comprehensive/Broad Field Science in the B.S. in Biology is not duplicative of any other secondary education program in the Charleston area since the sole audience for this proposed teacher education program at the secondary level is members of the South Carolina Corps of Cadets.

Enrollment:

Admission Requirements

Since this program modification is intended to lead the student to certification by the State Department of Education in Biology and Broad Field Science, admission requirements for the B. S. in Biology with Teaching Specialization in Biology and Comprehensive/Broad Field Science are the same as those for the Education Major.

Admission to the Major

To be admitted to the Teaching Specialization in Biology and Comprehensive/Broad Field Science, the student must have the support of his or her advisor relative to suitability and interest in teacher education and must also have:

1. Official passing scores on all three parts of PRAXIS I exams on file at The Citadel.
2. Maintained a cumulative Grade Point Ratio of 2.500 or higher on at least 45 credit hours of coursework taken at The Citadel;
3. Passed EDUC 101.

Students who have not met these requirements by the end of their sophomore year are not eligible for admission into a professional education program and will not be permitted to enroll in 300- (except EDUC 307 and EDUC 312) or 400-level Education courses.

Admission to the Internship in Teaching (EDUC 499 or PHED 499)

Students must make a formal application for admission no later than May 1st of the previous academic year for admission to the spring internship in teaching. The internship is not normally offered to students in fall semesters. This application will be reviewed by the Committee on Admissions and Retention of the School of Education and will include, among other things, recommendations from professors in completed professional education and content area courses, recommendations from general education faculty, and an evaluation by the

student's advisor regarding the student's suitability and interest in teacher education. In addition, the student must:

1. Have completed all professional education courses and content coursework;
2. Have completed the following professional education courses with a cumulative GPR of at least 2.500: EDUC 101, 202, 206, 306, 312, and 401;
3. Have on file at The Citadel the clearances required by the South Carolina State Department of Education through the FBI and SLED;
4. Have maintained a cumulative GPR of at least 2.500;
5. Have completed successfully all previous field experiences;
6. Have on file at The Citadel official records of the appropriate PRAXIS II test score(s) and the appropriate Principles of Learning and Teaching (PLT) test score.

The Director of Teacher Education will be informed of the results of this review and will send official notice of admission or rejection to the student. In the absence of significant extenuating circumstances, a student not eligible for the Internship in Teaching will be required to change majors.

Graduation Requirements

To meet graduation requirements, the student pursuing the Teaching Specialization in Biology and Comprehensive/Broad Field Science must complete all requirements in the course of study for that degree and must have earned a GPR of at least 2.500 on each of the following: all cumulative coursework and all professional education courses. In addition, passing scores on the appropriate PRAXIS II and Principles of Learning and Teaching (PLT) exams must be on file at The Citadel. Completion of the curricular requirements may result in licensure by the South Carolina Department of Education.

PROJECTED TOTAL ENROLLMENT						
YEAR	FALL		SPRING		SUMMER	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2009	5	75	6	90	2	12
2010	10	150	12	180	4	24
2011	15	225	17	255	4	24
2012	15	225	17	255	4	24
2013	15	225	17	255	4	24

ESTIMATED NEW ENROLLMENT

YEAR	FALL		SPRING		SUMMER	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2009	2	30	2	30	1	6
2010	5	75	5	75	2	12
2011	5	75	5	75	2	12
2012	5	75	5	75	2	12
2013	5	75	5	75	2	12

**Proposed Curriculum for Bachelor of Science in Biology
(Teaching Specialization in Biology and Comprehensive/Broad Field Science)**

Biology Courses

Course #	Title	Credit Hours
BIOL 130/131	Introduction to Biology I	4
BIOL 140/141	Introduction to Biology II	4
BIOL 205	Cell Biology	4
BIOL 308	Genetics	4
BIOL 406	Ecology	4
BIOL 330	Methods and Applications of Science	3
BIOLOGY ELECTIVES (chosen from list following)		15
Subtotal		38

Allied Science and Math Courses

Course #	Title	Credit Hours
CHEM 151/161	General Chemistry I	4
CHEM 152/162	General Chemistry II	4
EART 201	Earth Science	4
MATH 106/107	Applied Calculus I and II	6
PHYS 203/253	College Physics I	4
PHYS 204/254	College Physics II	4
STAT 160	Statistical Methods	3
Subtotal		29

Required Education Courses

Course #	Title	Credit Hours
EDUC 101	Education in Modern Society	3
EDUC 202	Educational Psychology	3
EDUC 206	Adolescent Development	3
EDUC 306	Teaching Reading in the Middle and High School	3
EDUC 312	Teaching Students with Special Needs	3
EDUC 401	Methods and Materials of Middle and High School Teaching	3
EDUC 402	Special Methods in Teaching	3
EDUC 499	Internship in Teaching	12
Subtotal		33

Core Curriculum Courses

Area	Course #'s	Credit Hours
Orientation	ORTN 101	1
Mathematics	Counted above	
Computer Skills	CSCI 110	3
English	ENGL 101/102/201/elective	12
History	HIST 103/104 or 105/106	6
Science	Counted above	
Social Science Core		3
HESS	Two Activity Courses	0
HESS	RPED 250/251	4
Subtotal		29

ROTC Courses

AERO, MLTY, or NAVL sequence	13-19
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Total 142-148

Biology Electives

One course must be chosen from each of the four areas below:

Course #	Title	Credit Hours
Animal Physiology Area		
BIOL 403	Mammalian Physiology	4
BIOL 414	Environmental Physiology	4
Animal Behavior and Evolution Area		
BIOL 208	Evolution	3
BIOL 307	Animal Behavior	3
Botany Area		
BIOL 203	Introduction to Plant Biology	4
BIOL 314	Vascular Flora of South Carolina	4
Zoology Area		
BIOL 301	Invertebrate Zoology	4
BIOL 302	Comparative Vertebrate Anatomy	4
BIOL 408	Ornithology	4
BIOL 410	Vertebrate Natural History	4

Faculty:

All requirements for the program modification will be met by existing faculty in the Department of Biology and the School of Education. The Citadel has defined 1 FTE faculty in two ways. If the faculty member is teaching all undergraduate courses, 1 FTE is defined as a 12-credit hour teaching load. If the faculty member is teaching at least one graduate course, 1 FTE is defined as a 9-credit hour teaching load.

Under the proposed program modification, there will be no change in qualifications or assignments for faculty, administration, or staff.

The Citadel addresses faculty development and faculty research through faculty driven processes. Each year the Faculty Development Committee and the Faculty Research Committee review proposals from faculty members and recommend to the Provost those proposals they feel should be funded through the Annual Award from The Citadel Foundation. Each year The Citadel provides \$300,000 to \$350,000 to members of the faculty in support of development and research.

In determining FTE faculty supporting this new teaching specialization, The Citadel has used the following logic. While every Biology class may not have a Biology major pursuing the Teaching Specialization, most undergraduate biology classes will meet a requirement in that program. Therefore, a biology faculty member is counted as supporting the Teaching Specialization to the extent he/she is teaching courses that could meet a requirement in that program. We have used fall 2008 teaching loads to estimate FTE faculty.

List Staff by Rank (e.g. Professor #1, Professor #2, Associate Professor#1, etc.)	Highest Degree Earned	Field of Study	Teaching in Field Yes/No
Professor #1	Ph.D.	Biology	YES
Associate Professor #1	Ph.D.	Biology	YES
Associate Professor # 2	Ph.D.	Biology	YES
Assistant Professor #1	Ph.D.	Biology	YES
Assistant Professor #2	Ph.D.	Biology	YES
Assistant Professor #3	Ph.D.	Biology	YES
Assistant Professor #4	Ph.D.	Biology	YES
Assistant Professor #5	Ph.D.	Biology	YES
Assistant Professor #6	Ph. D.	Biology	YES
Assistant Professor #7	Ph.D.	Biology	YES
Associate Professor #3	Ed. D.	Education	YES
Associate Professor #4	Ed. D.	Education	YES
Assistant Professor #8	Ed. D.	Education	YES
Assistant Professor #9	Ed. D.	Education	YES

UNIT ADMINISTRATION/FACULTY/STAFF SUPPORT						
YEAR	NEW		EXISTING		TOTAL	
	Headcount	FTE	Headcount	FTE	Headcount	FTE
Administration						
2009	0	0	3	.375	3	.375(1)
2010	0	0	3	.375	3	.375
2011	0	0	3	.375	3	.375
2012	0	0	3	.375	3	.375
2013	0	0	3	.375	3	.375
Faculty						
2009	0	0	14	7.50	14	7.50
2010	0		14	7.50	14	7.50
2011	0		14	7.50	14	7.50
2012	0		14	7.50	14	7.50
2013	0		14	7.50	14	7.50
Staff						
2009	0	0	3	1.25	3	1.25 (2)
2010	0	0	3	1.25	3	1.25
2011	0	0	3	1.25	3	1.25
2012	0	0	3	1.25	3	1.25
2013	0	0	3	1.25	3	1.25

(1) The three head count in administration are the Head of the Department of Biology, Dean of School of Science and Mathematics, and Dean of the School of Education each providing approximately .125 FTE for this program.

(2) One administrative assistant from the Department of Biology and one administrative assistant from the School of Education each providing .125 FTE and one Lab Manager from the Department of Biology providing 1 FTE, since most of the Biology Lab courses will meet some requirement in this program

(3) Eleven of the biology courses in the program will be offered each year. Each course will be 0.25% of that faculty member's yearly FTE.

Physical Plant

No new equipment or facilities will be needed to support this program modification. All faculty, course, laboratories, and related equipment are already in place supporting other programs.

Equipment

No new equipment or facilities will be needed to support this program modification. All faculty, course, laboratories, and related equipment are already in place supporting other programs.

Library Resources

No new library holdings or other support will be needed for this program modification. All necessary support is already in place for other programs.

Accreditation, Approval, Licensure, or Certification

The Citadel's School of Education uses eight assessment instruments to evaluate teacher candidate progress through the program. Assessment items have been aligned with State and National Standards. A list of assessments and when they are administered is part of the appendix and is titled: "NSTA - List of Assessments." Alignment of which assessment items relate directly to each NSTA standard are found in the "NSTA Standards Table" in appendix. Examples of each assessment item are available upon request.

Articulation

This program will be available only to members of the Corps of Cadets or Active Duty Students at The Citadel. There are, therefore, no opportunities to link this program to similar programs at other institutions or to develop collaborative efforts with other institutions. The Citadel does, however, welcome students who wish to transfer into the Corps of Cadets from other two- or four-year programs.

Estimated New Costs

Since the requirements of this program modification will be met through existing courses, facilities, laboratories, library holdings, and faculty, there will be no new costs. In addition, since this program is open only to the Corps of Cadets, which is fixed in size, there is no expectation of a change in Mission Resource Requirement of The Citadel. That is, this program modification will be a “zero-sum” for The Citadel. The credit hours generated by the program modification will come from other programs at The Citadel.

ESTIMATED NEW COSTS BY YEAR

CATEGORY	1st	2nd	3rd	4th	5th	TOTALS
Program Administration	0	0	0	0	0	0
Faculty Salaries	0	0	0	0	0	0
Graduate Assistants	0	0	0	0	0	0
Clerical/Support Personnel	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Library Resources	0	0	0	0	0	0
Equipment	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Other (Identify)	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0

SOURCES OF FINANCING BY YEAR

Estimated FTE Revenue Generated from the State (See note on p. 25)	*	*	*	*	*	0
Tuition Funding (New Students Only)	*	*	*	*	*	0
Other State Funding (Legislative Approp.)	0	0	0	0	0	0
Reallocation of Existing Funds	0	0	0	0	0	0
Federal Funding	0	0	0	0	0	0
Other Funding (Endowment, Auxiliary)	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0

* Since the students in this program will be from the Corps of Cadets that is fixed in size and there are no new costs associated with this program, no new revenue will be generated. Revenue will just be

Institutional Approval

Approval process for Bachelor of Science in Biology with a Teaching Specialization in Biology and Comprehensive/Broad Field Science:

8 April 2008 -- Approved by The Citadel's Professional Education Board

24 April 2008 -- Approved by the Faculty Committee on Curriculum and Instruction

29 April 2008 -- Approved by The Citadel's Academic Board

5 May 2008 -- Approved by the President

Note: This program modification did not require the approval of The Citadel Board of Visitors. The Board was, however, informed of this proposed modification at the June 2008 meeting.

Teacher Education — LIST OF ASSESSMENTS

Note: Candidate data for required coursework is monitored and will be part of the SPA reports.

Content Area Field		Type or Form of Assessment ¹	When the Assessment Is Administered ²
	Science		
	NSTA		
1	Content Knowledge – Licensure Tests	<u>PRAXIS II</u> – South Carolina Required <ul style="list-style-type: none"> • Content Test • Principles of Learning and Teaching 	Prior to Internship - <ul style="list-style-type: none"> • Undergraduate candidates must pass to be eligible for graduation and recommendation for certification. • Since much of their content is taken beyond The Citadel, MAT candidates must pass PRAXIS II to be eligible for internship.
2	Assessment of content knowledge in conceptual science area to be taught	<u>Content Area Indicators</u> – See form for each discipline	<u>During Internship</u> <ul style="list-style-type: none"> • Midterm • End <i>by Content Area Certified Classroom Teacher</i>
3	Pedagogical and Professional Knowledge, Skills and Dispositions – Planning Instruction	<u>ADEPT</u> <ul style="list-style-type: none"> • APS 1 – Long range planning • APS 2 – Short range planning of instruction • APS 3 – Short range planning, development and use of assessments 	<u>Prior to Internship</u> <ul style="list-style-type: none"> • Teaching Reading and Writing in Middle and High School - Content Areas, • Methods and Materials of Teaching Middle and High School • Special Methods courses <u>During Internship</u> <ul style="list-style-type: none"> • Midterm • End
4	Pedagogical and Professional Knowledge, Skills and Dispositions – Student Teaching Assessment	<u>ADEPT</u> <ul style="list-style-type: none"> • APS 4 – Establishing and maintaining high expectations for learners • APS 5 – Using instructional strategies to facilitate learning • APS 6 – Providing content for learners 	<u>Prior to Internship</u> <ul style="list-style-type: none"> • Teaching Reading and Writing in Middle and High School - Content Areas, • Methods and Materials of Teaching Middle and High <u>During Internship</u> <ul style="list-style-type: none"> • Midterm

¹ Identify the type of assessment (e.g., essay, case study, project, comprehensive exam, reflection, state licensure test, portfolio).

² Indicate the point in the program when the assessment is administered (e.g., admission to the program, admission to student teaching/internship, required courses [specify course title and numbers], or completion of the program).

Content Area Field Science		Type or Form of Assessment ¹	When the Assessment Is Administered ²
	NSTA		
		<ul style="list-style-type: none"> • APS 7 – Monitoring and enhancing learning • APS 8 – Maintaining an environment that promotes learning • APS 9 – Managing the classroom • APS 10 – Fulfilling professional duties and responsibilities 	<ul style="list-style-type: none"> • End
5	Effects on Student Learning	<p><u>Portfolio</u> –</p> <ul style="list-style-type: none"> 8. Creates positive environments for student learning 9. Understands and builds upon developmental levels of students 10. Understands diversity of students, families and communities 	<p><u>Prior to Internship</u></p> <ul style="list-style-type: none"> • Teaching Reading and Writing in Middle and High School - Content Areas, • Methods and Materials of Teaching Middle and High <p><u>During Internship</u></p> <ul style="list-style-type: none"> • Midterm • End
6	Content Knowledge – Research & Investigation	<p>Undergraduate – Portfolio Content related demonstration of SPA requirements –</p> <p><u>Evaluation Rubric items</u></p> <ul style="list-style-type: none"> 6. Demonstrates knowledge of the central concepts and tools of inquiry of the field 7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis, and synthesis <p><u>MAT – Evaluated on items listed above and School of Education Research Competencies:</u></p> <ul style="list-style-type: none"> 1. Demonstrates the use of statistical procedures 	<p><u>Portfolio</u></p> <p><u>Prior to Internship</u></p> <ul style="list-style-type: none"> • Teaching Reading and Writing in Middle and High School - Content Areas, • Methods and Materials of Teaching Middle and High • Special Methods courses <p><u>During Internship</u></p> <ul style="list-style-type: none"> • Midterm • End <p><u>Research Competencies</u> Data Collection and Analysis (EDUC 512)</p>

Content Area Field		Type or Form of Assessment ¹	When the Assessment Is Administered ²
Science	NSTA		
		<ol style="list-style-type: none"> 2. Interprets descriptive and inferential data 3. Paraphrases information from research articles 4. Cites references within action research study using correct APA format 5. Uses technology to present course projects 	
7	Pedagogical and Professional Knowledge, Skills and Dispositions – Legal/Safety/Ethical Issues	<u>Dispositions:</u> <ol style="list-style-type: none"> 1. Applies reflective practices 2. Demonstrates a commitment to a safe, supportive learning environment 3. Demonstrates high values and a caring, fair, honest, responsible, and respectful attitude. 4. Establishes rapport with students, families, colleagues, and community 5. Values diversity and exhibits sensitivity to and respect for cultures 6. Exhibits prompt regular attendance, wears professional attire, and communicates in standard English. 	<u>Prior to Internship</u> <ul style="list-style-type: none"> • Admission and Retention Committee recommendation prior to transition points • Teaching Students with Special Needs/ Exceptional Child • Teaching Reading and Writing in Middle and High School - Content Areas, • Methods and Materials of Teaching Middle and High <u>During Internship</u> <ul style="list-style-type: none"> • Midterm • End
8	Content Knowledge – Contextual	<u>Portfolio –</u> <ol style="list-style-type: none"> 6. Demonstrates knowledge of the central concepts and tools of inquiry of the field 7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis 11. Understands policy contexts in work settings 	<u>Prior to Internship</u> <ul style="list-style-type: none"> • Teaching Reading and Writing in Middle and High School - Content Areas, • Methods and Materials of Teaching Middle and High • Special Methods courses <u>During Internship</u> <ul style="list-style-type: none"> • Midterm • End

NSTA STANDARD

Content. Teachers of science understand and can articulate the knowledge and practices of contemporary science. They can interrelate and interpret important concepts, ideas, and applications in their fields of licensure; and can conduct scientific investigations. To show that they are prepared in content, teachers of science must demonstrate that they **(a)** understand and can successfully convey to students the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association; **(b)** understand and can successfully convey to students the unifying concepts of science delineated by the National Science Education Standards; **(c)** understand and can successfully convey to students important personal and technological applications of science in their fields of licensure; **(d)** understand research and can successfully design, conduct, report and **(e)** evaluate investigations in science; and understand and can successfully use mathematics to process and report data, and solve problems, in their field(s) of licensure.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- Content course grades
- PRAXIS II – Prior to internship. Must pass prior to recommendation for graduation and certification
- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
 - APS 1 – Long range planning;
 - APS 2 – Short range planning of instruction;
 - APS 3 – Short range planning, development and use of assessments;
 - APS 4 – Establishing and maintaining high expectations for learners;
 - APS 5 – Using instructional strategies to facilitate learning;
 - APS 6 – Providing content for learners;
 - APS 7 – Monitoring and enhancing learning;
 - APS 8 – Maintaining an environment that promotes learning;
 - APS 9 – Managing the classroom;
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 1) Demonstrates knowledge of the central concepts and tools of inquiry of the field.
 - 2) Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis.
 - 3) Content: The candidate structures and interprets the concepts, ideas, and relationships in science needed to advance student learning in the area of licensure, as defined by state and national standards.
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
 6. Demonstrates knowledge of the central concepts and tools of inquiry of the field
 7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis

Nature of Science. Teachers of science engage students effectively in studies of the history, philosophy, and practice of science. They enable students to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze assertions made in the name of science. To show they are prepared to teach the nature of science, teachers of science must demonstrate that they **(a)** understand the historical and cultural development of science and the evolution of knowledge in their discipline; **(b)** understand the philosophical tenets, assumptions, goals, and values that distinguish science from technology and from other ways of knowing the world; and **(c)** engage students successfully in studies of the nature of science including, when possible, the critical analysis of false or doubtful assertions made in the name of science.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
 - APS 1 – Long range planning;
 - APS 2 – Short range planning of instruction;
 - APS 3 – Short range planning, development and use of assessments;
 - APS 5 – Using instructional strategies to facilitate learning;
 - APS 6 – Providing content for learners;
 - APS 7 – Monitoring and enhancing learning;
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):

NSTA STANDARD

- 4) Nature of Science: The candidate engages students in activities defining the values, beliefs and assumptions inherent to the creation of scientific explanations.
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
6. Demonstrates knowledge of the central concepts and tools of inquiry of the field
7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis

Inquiry. Teachers of science engage students both in studies of various methods of scientific inquiry and in active learning through scientific inquiry. They encourage students, individually and collaboratively, to observe, ask questions, design inquiries, and collect and interpret data in order to develop concepts and relationships from empirical experiences. To show that they are prepared to teach through inquiry, teachers of science must demonstrate that they **(a)** understand the processes, tenets, and assumptions of multiple methods of inquiry leading to scientific knowledge; and **(b)** engage students successfully in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
APS 1 – Long range planning;
APS 2 – Short range planning of instruction;
APS 3 – Short range planning, development and use of assessments;
APS 4 – Establishing and maintaining high expectations for learners;
APS 5 – Using instructional strategies to facilitate learning;
APS 6 – Providing content for learners;
APS 7 – Monitoring and enhancing learning;
APS 8 – Maintaining an environment that promotes learning;
APS 9 – Managing the classroom;
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
5) Inquiry: The candidate engages students in science inquiry and facilitates understanding of the role inquiry plays in the development of scientific knowledge.
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
6. Demonstrates knowledge of the central concepts and tools of inquiry of the field
7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis

Issues. Teachers of science recognize that informed citizens must be prepared to make decisions and take action on contemporary science- and technology-related issues of interest to the general society. They require students to conduct inquiries into the factual basis of such issues and to assess possible actions and outcomes based upon their goals and values. To show that they are prepared to engage students in studies of issues related to science, teachers of science must demonstrate that they **(a)** understand socially important issues related to science and technology in their field of licensure, as well as processes used to analyze and make decisions on such issues; and **(b)** engage students successfully in the analysis of problems, including considerations of risks, costs, and benefits of alternative solutions; relating these to the knowledge, goals and values of the students.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
APS 1 – Long range planning;
APS 2 – Short range planning of instruction;
APS 3 – Short range planning, development and use of assessments;
APS 4 – Establishing and maintaining high expectations for learners;
APS 5 – Using instructional strategies to facilitate learning;
APS 6 – Providing content for learners;

NSTA STANDARD

- APS 7 – Monitoring and enhancing learning;
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 6) Context of Science: The candidate relates science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.
 - 9) Social Context: The candidate relates science to the community and uses human and institutional resources in the community to advance the education of her/his students in science.
 - Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
 6. Demonstrates knowledge of the central concepts and tools of inquiry of the field
 7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis

General Skills of Teaching. Teachers of science create a community of diverse learners who construct meaning from their science experiences and possess a disposition for further exploration and learning. They use, and can justify, a variety of classroom arrangements, groupings, actions, strategies, and methodologies. To show that they are prepared to create a community of diverse learners, teachers of science must demonstrate that they **(a)** vary their teaching actions, strategies, and methods to promote the development of multiple student skills and levels of understanding;

(b) successfully promote the learning of science by students with different abilities, needs, interests, and backgrounds; **(c)** successfully organize and engage students in collaborative learning using different student group learning strategies; **(d)** successfully use technological tools, including but not limited to computer technology, to access resources, collect and process data, and facilitate the learning of science; **(e)** understand and build effectively upon the prior beliefs, knowledge, experiences, and interests of students; and **(f)** create and maintain a psychologically and socially safe and supportive learning environment.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- PRAXIS II – Principles of Teaching and Learning – Prior to internship. Must pass prior to recommendation for graduation and certification
- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.

APS 1 – Long range planning;
APS 2 – Short range planning of instruction;
APS 3 – Short range planning, development and use of assessments;
APS 4 – Establishing and maintaining high expectations for learners;
APS 5 – Using instructional strategies to facilitate learning;
APS 6 – Providing content for learners;
APS 7 – Monitoring and enhancing learning;
APS 8 – Maintaining an environment that promotes learning;
APS 9 – Managing the classroom;
APS 10 – Fulfilling professional duties and responsibilities
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 3) Content: The candidate structures and interprets the concepts, ideas, and relationships in science needed to advance student learning in the area of licensure, as defined by state and national standards.
 - 7) Skills of Teaching: The candidate uses diverse and effective actions, strategies and methodologies to teach science.
 - 11) Environment: The candidate designs and manages safe and supportive learning environments reflecting high expectations for the success of all students.
- Dispositions are evaluated prior to internship in Exceptional Child, Methods, Teaching Reading, and Special Methods as well as by the Admission and Retention Committee. They are also evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related items are:
 1. Applies reflective practices;
 2. Demonstrates a commitment to a safe, supportive learning environment;
 3. Demonstrates high values and a caring, fair, honest, responsible, and respectful attitude;
 4. Establishes rapport with students, families, colleagues, and community;
 5. Values diversity and exhibits sensitivity to and respect for cultures
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and

NSTA STANDARD

Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:

8. Creates positive environments for student learning
9. Understands and builds upon developmental levels of students. Understands diversity of students, families and communities.

Curriculum. Teachers of science plan and implement an active, coherent, and effective curriculum that is consistent with the goals and recommendations of the National Science Education Standards. They begin with the end in mind and effectively incorporate contemporary practices and resources into their planning and teaching. To show that they are prepared to plan and implement an effective science curriculum, teachers of science must demonstrate that they **(a)** understand the curricular recommendations of the National Science Education Standards, and can identify, access, and/or create resources and activities for science education that are consistent with the standards; and **(b)** plan and implement internally consistent units of study that address the diverse goals of the National Science Education Standards and the needs and abilities of students.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
APS 1 – Long range planning;
APS 2 – Short range planning of instruction;
APS 3 – Short range planning, development and use of assessments;
APS 4 – Establishing and maintaining high expectations for learners;
APS 5 – Using instructional strategies to facilitate learning;
APS 6 – Providing content for learners;
APS 7 – Monitoring and enhancing learning;
APS 8 – Maintaining an environment that promotes learning;
APS 9 – Managing the classroom;
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 1) Demonstrates knowledge of the central concepts and tools of inquiry of the field.
 - 2) Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis.
 - 3) Content: The candidate structures and interprets the concepts, ideas, and relationships in science needed to advance student learning in the area of licensure, as defined by state and national standards.
 - 8) Curriculum: The candidate develops coherent meaningful goals, plans and materials and finds resources appropriate for addressing the needs, abilities and interests of students.
 - 10) Assessment: The candidate uses a variety of contemporary assessment strategies to evaluate the intellectual, social and personal development of the learner in all aspects of science.
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
 6. Demonstrates knowledge of the central concepts and tools of inquiry of the field
 7. Demonstrates and applies structures of the field delineated in professional, state, and institutional standards through inquiry, critical analysis and synthesis

Science in the Community. Teachers of science relate their discipline to their local and regional communities, involving stakeholders and using the individual, institutional, and natural resources of the community in their teaching. They actively engage students in science-related studies or activities related to locally important issues. To show that they are prepared to relate science to the community, teachers of science must demonstrate that they **(a)** identify ways to relate science to the community, involve stakeholders, and use community resources to promote the learning of science; and **(b)** involve students successfully in activities that relate science to resources and stakeholders in the community or to the resolution of issues important to the community.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
APS 1 – Long range planning;
APS 2 – Short range planning of instruction;
APS 3 – Short range planning, development and use of assessments;
APS 4 – Establishing and maintaining high expectations for learners;
APS 5 – Using instructional strategies to facilitate learning;
APS 6 – Providing content for learners;

NSTA STANDARD

- APS 7 – Monitoring and enhancing learning;
APS 10 – Fulfilling professional duties and responsibilities
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 3) Content: The candidate structures and interprets the concepts, ideas, and relationships in science needed to advance student learning in the area of licensure, as defined by state and national standards.
 - 9) Social Context: The candidate relates science to the community and uses human and institutional resources in the community to advance the education of her/his students in science.
 - Dispositions are evaluated prior to internship in Exceptional Child, Methods, Teaching Reading, and Special Methods as well as by the Admission and Retention Committee. They are also evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related items are:
 1. Applies reflective practices;
 2. Demonstrates a commitment to a safe, supportive learning environment;
 3. Demonstrates high values and a caring, fair, honest, responsible, and respectful attitude;
 4. Establishes rapport with students, families, colleagues, and community;
 5. Values diversity and exhibits sensitivity to and respect for cultures
 - Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
 8. Creates positive environments for student learning
 9. Understands and builds upon developmental levels of students. Understands diversity of students, families and communities.
 11. Understands policy contexts in work settings

Assessment. Teachers of science construct and use effective assessment strategies to determine the backgrounds and achievements of learners and facilitate their intellectual, social, and personal development. They assess students fairly and equitably, and require that students engage in ongoing self-assessment. To show that they are prepared to use assessment effectively, teachers of science must demonstrate that they **(a)** use multiple assessment tools and strategies to achieve important goals for instruction that are aligned with methods of instruction and the needs of students;

(b) use the results of multiple assessments to guide and modify instruction, the classroom environment, or the assessment process; and **(c)** use the results of assessments as vehicles for students to analyze their own learning, engaging students in reflective self-analysis of their own work.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- PRAXIS II – Principles of Teaching and Learning – Prior to internship. Must pass prior to recommendation for graduation and certification
- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.

APS 1 – Long range planning;
APS 2 – Short range planning of instruction;
APS 3 – Short range planning, development and use of assessments;
APS 4 – Establishing and maintaining high expectations for learners;
APS 5 – Using instructional strategies to facilitate learning;
APS 6 – Providing content for learners;
APS 7 – Monitoring and enhancing learning;
APS 8 – Maintaining an environment that promotes learning;
APS 9 – Managing the classroom;
APS 10 – Fulfilling professional duties and responsibilities
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 7) Skills of Teaching: The candidate uses diverse and effective actions, strategies and methodologies to teach science.
 - 10) Assessment: The candidate uses a variety of contemporary assessment strategies to evaluate the intellectual, social and personal development of the learner in all aspects of science.
- Dispositions are evaluated prior to internship in Exceptional Child, Methods, Teaching Reading, and Special Methods as well as by the Admission and Retention Committee. They are also evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related items are:
 1. Applies reflective practices;
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and

NSTA STANDARD

process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:

8. Creates positive environments for student learning
9. Understands and builds upon developmental levels of students. Understands diversity of students, families and communities.

Safety and Welfare. Teachers of science organize safe and effective learning environments that promote the success of students and the welfare of all living things. They require and promote knowledge and respect for safety, and oversee the welfare of all living things used in the classroom or found in the field. To show that they are prepared, teachers of science must demonstrate that they **(a)** understand the legal and ethical responsibilities of science teachers for the welfare of their students, the proper treatment of animals, and the maintenance and disposal of materials; **(b)** know and practice safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used in science instruction; **(c)** know and follow emergency procedures, maintain safety equipment, and ensure safety procedures appropriate for the activities and the abilities of students; and **(d)** treat all living organisms used in the classroom or found in the field in a safe, humane, and ethical manner and respect legal restrictions on their collection, keeping, and use.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- PRAXIS II – Principles of Teaching and Learning – Prior to internship. Must pass prior to recommendation for graduation and certification
- ADEPT APS 1-9 – Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
 - APS 1 – Long range planning;
 - APS 2 – Short range planning of instruction;
 - APS 3 – Short range planning, development and use of assessments;
 - APS 4 – Establishing and maintaining high expectations for learners;
 - APS 5 – Using instructional strategies to facilitate learning;
 - APS 6 – Providing content for learners;
 - APS 7 – Monitoring and enhancing learning;
 - APS 8 – Maintaining an environment that promotes learning;
 - APS 9 – Managing the classroom;
 - APS 10 – Fulfilling professional duties and responsibilities
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 3) Content: The candidate structures and interprets the concepts, ideas, and relationships in science needed to advance student learning in the area of licensure, as defined by state and national standards.
 - 7) Skills of Teaching: The candidate uses diverse and effective actions, strategies and methodologies to teach science.
 - 11) Environment: The candidate designs and manages safe and supportive learning environments reflecting high expectations for the success of all students.
- Dispositions are evaluated prior to internship in Exceptional Child, Methods, Teaching Reading, and Special Methods as well as by the Admission and Retention Committee. They are also evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related items are:
 1. Applies reflective practices;
 2. Demonstrates a commitment to a safe, supportive learning environment;
 3. Demonstrates high values and a caring, fair, honest, responsible, and respectful attitude;
 4. Establishes rapport with students, families, colleagues, and community;
 5. Values diversity and exhibits sensitivity to and respect for cultures
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
 8. Creates positive environments for student learning
 9. Understands and builds upon developmental levels of students. Understands diversity of students, families and communities.
 11. Understands policy contexts in work settings

NSTA STANDARD

10. Professional Growth. Teachers of science strive continuously to grow and change, personally and professionally, to meet the diverse needs of their students, school, community, and profession. They have a desire and disposition for growth and betterment. To show their disposition for growth, teachers of science must demonstrate that they **(a)** engage actively and continuously in opportunities for professional learning and leadership that reach beyond minimum job requirements; **(b)** reflect constantly upon their teaching and identify ways and means through which they may grow professionally; **(c)** use information from students, supervisors, colleagues and others to improve their teaching and facilitate their professional growth; and **(d)** interact effectively with colleagues, parents, and students; mentor new colleagues; and foster positive relationships with the community.

Teacher candidates will be evaluated on this standard through the use of the following assessments:

- ADEPT APS 1-10 – The narrative portion of teacher work sample includes reflective pieces related to each of the ADEPT Performance Standards. The Teacher work sample is evaluated prior to internship in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship.
 - APS 1 – Long range planning;
 - APS 2 – Short range planning of instruction;
 - APS 3 – Short range planning, development and use of assessments;
 - APS 4 – Establishing and maintaining high expectations for learners;
 - APS 5 – Using instructional strategies to facilitate learning;
 - APS 6 – Providing content for learners;
 - APS 7 – Monitoring and enhancing learning;
 - APS 8 – Maintaining an environment that promotes learning;
 - APS 9 – Managing the classroom;
 - APS 10 – Fulfilling professional duties and responsibilities
- Content Area Evaluation by Content area certified and ADEPT trained Internship Supervising Teacher – related items (reported at midterm of internship and at final):
 - 3) Content: The candidate structures and interprets the concepts, ideas, and relationships in science needed to advance student learning in the area of licensure, as defined by state and national standards.
 - 4) Nature of Science: The candidate engages students in activities defining the values, beliefs and assumptions inherent to the creation of scientific explanations.
 - 5) Inquiry: The candidate engages students in science inquiry and facilitates understanding of the role inquiry plays in the development of scientific knowledge.
 - 7) Skills of Teaching: The candidate uses diverse and effective actions, strategies and methodologies to teach science.
 - 11) Environment: The candidate designs and manages safe and supportive learning environments reflecting high expectations for the success of all students.
- Dispositions are evaluated prior to internship in Exceptional Child, Methods, Teaching Reading, and Special Methods as well as by the Admission and Retention Committee. They are also evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related items are:
 - 1. Applies reflective practices;
 - 2. Demonstrates a commitment to a safe, supportive learning environment;
 - 3. Demonstrates high values and a caring, fair, honest, responsible, and respectful attitude;
 - 4. Establishes rapport with students, families, colleagues, and community;
 - 5. Values diversity and exhibits sensitivity to and respect for cultures
- Portfolio evidence of instructional planning and teaching that includes the use of science investigations, and process skills. These portfolios will also demonstrate the use of assessments and reflective process in secondary settings. Prior to internship, evaluated in Methods, Teaching Reading in the Content areas, and Special Methods. Evaluated throughout internship. Consensus (University Supervisor, Cooperating Teacher, and Intern) evaluation reported at midterm and final of internship. Related portfolio evaluation items:
 - 8. Creates positive environments for student learning
 - 9. Understands and builds upon developmental levels of students. Understands diversity of students, families and communities.
 - 11. Understands policy contexts in work settings