

Program Report for the Preparation of Secondary Mathematics Teachers National Council of Teachers of Mathematics (NCTM) 2012 Standards - Option A

NCATE approved the 2012 NCTM Standards in 2012. Programs can use either the 2003 or the 2012 standards through Fall 2014.
Beginning in Spring 2015, programs submitting reports must use the 2012 Standards.

NATIONAL COUNCIL FOR ACCREDITATION OF TEACHER EDUCATION

COVER SHEET

1. Institution Name

National Louis University

2. State

Illinois

3. Date submitted

MM DD YYYY

09 / 13 / 2016

4. Report Preparer's Information:

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6. Name of institution's program

Secondary Mathematics Teacher Preparation Program

7. NCATE Category

Mathematics Education

8. Grade levels⁽¹⁾ for which candidates are being prepared

6-12

(1) e.g. 7-12, 9-12

9. Program Type

First teaching license

10. Degree or award level

- Baccalaureate
- Post Baccalaureate
- Master's

11. Is this program offered at more than one site?

- Yes
- No

12. If your answer is "yes" to above question, list the sites at which the program is offered

13. Title of the state license for which candidates are prepared

Type 09

14. Program report status:

- Initial Review
- Response to One of the Following Decisions: Further Development Required or Recognition with Probation
- Response to National Recognition with Conditions

15. Is your unit seeking

- NCATE accreditation for the first time (initial accreditation)
- Continuing NCATE accreditation

16. State Licensure requirement for national recognition:

NCATE requires 80% of the program completers who have taken the test to pass the applicable state licensure test for the content field, if the state has a testing requirement. Test information and data must be reported in Section IV. Does your state require such a test?

- Yes
- No

SECTION I - CONTEXT

1. Description of any state or institutional policies that may influence the application of NCTM standards. (Response limited to 4,000 characters INCLUDING SPACES)

Certification standards for Illinois public school teachers are set forth and administered by the Illinois State Board of Education. To earn a Professional Certification in Secondary Education (Type 09) for grades 6-12 with an endorsement in Mathematics, the Illinois education code requires that candidates 1) maintain a grade point average (GPA) at or above 2.5 to stay in the teacher preparation program; 2) have a degree/major in Mathematics or earn 32 semester hours in mathematics; and 3) pass student teaching.

The National College of Education (NCE) and Secondary Education Department has developed admission/retention policies and procedures for graduate level candidates. All mathematics teacher candidates: 1) need to hold a Baccalaureate degree from a regionally accredited institution; 2) receive passing scores on the Illinois Basic Skills Test and Content Area Exam (Field 115); 3) complete 32 semester hours in mathematics, with no grade less than a C on official transcripts and with appropriate distribution of content courses as set forth by NCTM's Content Standards; 4) earn a GPA of 2.5 or better in mathematics content coursework; 5) earn a GPA of 3.0 or above in the last 60 semester hours of coursework for full admission (GPA's at or between 2.5 and 2.9 are considered for provisional admission on an individual basis); 6) must pass student teaching; and 7) must pass the EdTpa assessment.

Candidates who are provisionally admitted (with a GPA in the last 60 hours of coursework at or between 2.5 and 2.9 or missing up to six semester hours of relevant mathematics coursework) into the Secondary Mathematics Teacher Preparation Program are required to address these deficiencies in one of two ways:

- . they can take additional mathematics course(s) they are missing or failed to complete with a C or above at another postsecondary institution and transfer the credits in order to fulfill the requirement of a GPA of 3.0 in the last 60 hours of coursework (i.e., available to candidates who are enrolled in either the traditional or alternative secondary certification program_must be completed prior to taking core courses); . they have to obtain all As in their first term of core courses in the program (ONLY available to candidates with a GPA in the last 60 semester hours of coursework at or between 2.5 and 2.9 and who are enrolled in the traditional secondary certification program); or . they can develop extra instructional unit plans that target each mathematical area of deficiency (or missing course(s)) in addition to the required unit they have to complete during their secondary mathematics content methods course (ONLY available to candidates who are missing up to six semester hours of relevant mathematics coursework and enrolled in the Teach for America (TFA) alternative secondary certification program).

All mathematics teacher candidates taking courses in the Secondary Education Department should fully understand that graduate credits hours toward a Master's of Art in Teaching (MAT) degree and/or toward certification under the auspices of the National College of Education (NCE) and National-Louis University (NLU) are earned only after formal admission to the Secondary Mathematics Teacher Preparation Program. A maximum of nine semester hours taken as a Student-at-Large in the NCE prior to formal admission may be applied toward a MAT degree or certificate of advanced study.

For the program to be approved by the state of Illinois, the graduate program including its forms of assessment has to address NCTM's Program Standards. Also, NCE's conceptual and dispositional frameworks, and the Secondary Education Department's Student Learning

Outcomes (SLOs). (See Figure 1 for a representation of these alignments.)

2. Description of the field and clinical experiences required for the program, including the number of hours for early field experiences and the number of hours/weeks for student teaching or internships. (Response limited to 8,000 characters INCLUDING SPACES)

The Secondary Education Department's traditional Master's of Art in Teaching (MAT) program requires that a minimum of 100 logged hours of observation be completed prior to student teaching. Classroom observations are designed to provide mathematics teacher candidates with opportunities to develop and refine teaching skills. Four core courses required for certification in Secondary Education include observation hours as a requirement of the courses.

During the first term of the certification portion of the program, candidates participate in two field experiences. In the first field experience, candidates are enrolled in SEC502-Methods and Materials for Teaching at the Secondary Level. This course requires a total of 25 observation hours. Instructors are responsible for taking candidates on at least two school visits. Candidates are responsible for completing observation activities during school visits with and without their instructor.

In the second field experience during the first term, SPE500-Introduction to Exceptional Children and Adolescents/Special Education provides candidates with experiences in classrooms serving students with special needs. Candidates spend a total of 15 hours in a special education classroom setting, where they complete observation tasks provided by the instructor.

In the second term, candidates again are involved in two field experiences. The first experience is associated with the secondary mathematics content methods course, SEC514-Teaching Mathematics in Secondary Schools. Mathematics candidates are required to conduct 45 hours of structured observations of mathematics instruction. Candidate observations become integrated in the course by making candidates' experience in the field an integral part of classroom discussions and by requiring written observation reflections.

Candidates fulfill an additional 15 hours of observation as part of their Educational Psychology course, EPS511-Human Development and Learning in Instructional Contexts. Candidates spend their 15 observation hours observing the practice and manifestation of human development theories in classroom settings.

Candidates will complete an observation log in conjunction with each course and set of observation hours. An important part of this process is to help mathematics candidates focus their observations as ways to make connections between theory and practice, draw conclusions about what seems to work in classroom settings and collect a repertoire of strategies and approaches to classroom instruction.

Student teaching is the culminating experience prior to certification for the traditional MAT program. Candidates attend an orientation by the Office of School-College Relations (OSCR) and must complete and submit a student teaching application to OSCR during their first term in the program. All mathematics candidates are required to attend a seminar course, SEC590C: Student Teaching in the Secondary School or SEC592C/SEC597C: Resident Student Teaching (Teach for America (TFA) and Academy for Urban School Leadership (AUSL), respectively), which is for candidates enrolled in the alternative secondary certification MAT programs. Candidates enrolled in the traditional MAT program meet five times for their seminar course during the third term. However, candidates enrolled in an alternative certification program, which includes the AUSL Resident Teacher Program (RTP), meet monthly for their seminar course throughout all three terms. The Chicago Teaching Fellows (CTF) alternative secondary certification program has been inactive since 2008.

Mathematics candidates in the traditional program complete a minimum of ten weeks of student teaching including at least four consecutive weeks of full-day teaching in a selected secondary mathematics classroom. The beginning and ending dates of student teaching depend on the candidate's school placement. Mathematics student teachers are supervised by a designated NLU supervisor who is a certified secondary mathematics teacher with a minimum of 10 years of teaching experience in a school district in Chicago and/or the Chicagoland area.

Mathematics candidates enrolled in an alternative secondary certification MAT program are provided a provisional certificate by the state of Illinois and required to have at least 170 full days of teaching. These mathematics candidates attend job fairs during the summer and are hired to teach in the Chicago Public School (CPS) District. Also, they are assigned certified secondary mathematics supervisors/mentors as determined by and agreed upon by the National College of Education (NCE) and the TFA and AUSL organizations.

All traditional program secondary mathematics candidates are assigned a NLU supervisor. Supervisors come to NLU with varied backgrounds and many years of teaching and administrative experience in middle/high schools in urban/rural areas throughout the United States. These certified supervisors in secondary mathematics may also hold several advanced degrees, certifications, and professional development hours beyond their master and doctoral levels.

Student teaching is a transitional period during which there is a change in roles for candidates from learning about teaching to experiences of serving as a teacher. The student teaching experience consists of a gradual assumption of teaching responsibilities. Ultimately, candidates are expected to assume full responsibility for preparing and teaching the same number of classes as the certified secondary mathematics cooperating teacher in the assigned placement. This includes teaching five courses (with up to three different class preparation periods). In a school with a block schedule, typically a student teacher would assume responsibility for teaching three courses (with two different class preparation periods). It is recommended, wherever possible, that the student teacher begins to gradually assume the responsibility of teaching the classes early in the term to experience as much teaching as possible on her/his own. In the end, mathematics candidates must experience at least four consecutive weeks, out of the ten weeks, of full responsibility for all classes.

In addition to these responsibilities, student teachers are encouraged to participate in as many activities at the placement school as allowed and as their time will permit. We encourage student teachers to attend faculty meetings, parent meetings, professional development activities, and school-related community or local governance meetings. Student teachers are expected to take on the non-teaching duties of their cooperating teacher and participate in extracurricular activities as much as possible and as the cooperating teacher deems necessary. However, none of these responsibilities should interfere with attending their NLU seminar class meetings.

Placements are made in schools where both principals and cooperating teachers welcome candidates as a potential future member of the teaching profession. Student teachers are assigned to exemplary cooperating and supervising teachers. The cooperating teacher(s) mentor the student teacher on a daily basis. During the ten-weeks, the cooperating teacher and a NLU supervisor collaborate in mentoring and evaluating the student teacher. NLU supervisors also assess the student teacher throughout her/his student teaching experience. Cooperating teachers and NLU supervisors are required to assess student teachers' goals, daily lesson plans, classroom management, and performance at least twice (i.e., midterm and final) using the relevant student teaching evaluation instrument. This is also an opportunity for seasoned cooperating teachers to pass on their own insights, development, and expertise to the candidate. The NLU supervisor is required to visit a student teacher for a minimum of three observations as well as be available for additional visits and weekly counsel by phone and/or e-mail.

study must include course titles and numbers. (This information may be provided as an attachment from the college catalog or as a student advisement sheet.) For post baccalaureate or master's programs include a graduate advising form or transcript analysis form showing undergraduate mathematics content course requirements aligned to *NCTM NCATE Mathematics Content for Secondary*.

nce_coursesofstudy_sec_math.pdf

See **Attachment** panel below.

4. This system will not permit you to include tables or graphics in text fields. Therefore any tables or charts must be attached as files here. The title of the file should clearly indicate the content of the file. Word documents, pdf files, and other commonly used file formats are acceptable.

5. Candidate Information

Directions: Provide three years of data on candidates enrolled in the program and completing the program, beginning with the most recent academic year for which numbers have been tabulated. Report the data separately for the levels/tracks (e.g., baccalaureate, post-baccalaureate, alternate routes, master's, doctorate) being addressed in this report. Data must also be reported separately for programs offered at multiple sites. Update academic years (column 1) as appropriate for your data span. Create additional tables as necessary.

Program: Secondary Mathematics Education		
Academic Year	# of Candidates Enrolled in the Program	# of Program Completers ⁽²⁾
2015-2016	37	8
2014-2015	42	18
2013-2014	54	18

(2) NCATE uses the Title II definition for program completers. Program completers are persons who have met all the requirements of a state-approved teacher preparation program. Program completers include all those who are documented as having met such requirements. Documentation may take the form of a degree, institutional certificate, program credential, transcript, or other written proof of having met the program's requirements.

6. Faculty Information

Directions: Complete the following information for each faculty member responsible for professional coursework, clinical supervision, or administration in this program.

Faculty Member Name	Kemeny, Vera
Highest Degree, Field, & University ⁽³⁾	PhD in Educational Psychology, University of Wisconsin-Madison
Assignment: Indicate the role of the faculty member ⁽⁴⁾	Faculty
Faculty Rank ⁽⁵⁾	Associate Professor
Tenure Track	<input checked="" type="checkbox"/> YES
Scholarship ⁽⁶⁾ , Leadership in Professional Associations, and Service ⁽⁷⁾ : List up to 3 major contributions in the past 3 years ⁽⁸⁾	Salmon, D., Rossman, A., Kemeny, V., & Winter, J. (2008). Meaning-Mechanics Tensions in Teacher Decisions. <i>Action in Teacher Education</i> . Garjaka, Karla and Kemeny, Vera (2008). Developing High School Culturally and Linguistically Diverse Students' Reading Skills: A Successful Intervention Model. Paper presented at the Annual Meeting of the National Association School Psychologists in New Orleans, LA, February, 2008. Salmon, D., Rossman, A., Kemeny, V., and Winter, J (2006). Modeling differences in teacher decisions: The role of automaticity and knowledge integration. Paper presented at the annual meeting of the American Educational Research Association, Chicago, 2007.
Teaching or other professional experience in P-12 schools ⁽⁹⁾	Coordinated a PD effort at the Waukegan High School for a group of freshmen Algebra teachers. Activities included heading the efforts of a small group of coaches and teaching a combined technology and mathematics methods course for the participating teachers. Project began in March of 2010 and will last until the end of September of 2010.

Faculty Member Name	Ko, Eun Kyung
Highest Degree, Field, & University ⁽³⁾	PhD in Science Education , Illinois Institute of Technology
Assignment: Indicate the role of the faculty member ⁽⁴⁾	Faculty
Faculty Rank ⁽⁵⁾	Assistant Professor
Tenure Track	<input checked="" type="checkbox"/> YES
Scholarship ⁽⁶⁾ , Leadership in Professional Associations, and Service ⁽⁷⁾ : List up to 3 major contributions in the past 3 years ⁽⁸⁾	Keynote speaker (2009), The Second Annual Science Education Summer Institute, National-Louis University, Chicago, IL Ko, E. (March, 2010). Young Scientist's Genetics: Teaching contents and scientific inquiry. Paper presented at the National Convention of the National Science Teachers Association, Philadelphia, Pennsylvania. Ko, E. (February, 2010). Seeking for Different Ways of Planning for Teaching: Preservice Teachers' Views of Instructional Planning and Their Practices. Paper presented at the Annual Meeting of the Associations of Teacher Educators, Chicago, IL.
Teaching or other professional experience in P-12 schools ⁽⁹⁾	Hasang Korean School, consultation Clinical Supervision: Chicago Public Schools Korean National Board Certification Elementary Teacher

Faculty Member Name	Keith W. Cox
Highest Degree, Field, & University ⁽³⁾	MS Mathematics/Ed
Assignment: Indicate the role of the faculty member ⁽⁴⁾	Illinois Institute of Technology
Faculty Rank ⁽⁵⁾	Adjunct
Tenure Track	<input checked="" type="checkbox"/> YES
Scholarship ⁽⁶⁾ , Leadership in Professional Associations, and Service ⁽⁷⁾ : List up to 3 major contributions in the past 3 years ⁽⁸⁾	National Board Certified Teacher Mathematics
Teaching or other professional experience in P-12 schools ⁽⁹⁾	22 years teaching high school mathematics full time.

(3) e.g., PhD in Curriculum & Instruction, University of Nebraska.

(4) e.g., faculty, clinical supervisor, department chair, administrator

(5) e.g., professor, associate professor, assistant professor, adjunct professor, instructor

(6) Scholarship is defined by NCATE as systematic inquiry into the areas related to teaching, learning, and the education of teachers and other school personnel. Scholarship includes traditional research and publication as well as the rigorous and systematic study of pedagogy, and the application of current research findings in new settings. Scholarship further presupposes submission of one's work for professional review and evaluation.

(7) Service includes faculty contributions to college or university activities, schools, communities, and professional associations in ways that are consistent with the institution and unit's mission.

(8) e.g., officer of a state or national association, article published in a specific journal, and an evaluation of a local school program.

(9) Briefly describe the nature of recent experience in P-12 schools (e.g. clinical supervision, inservice training, teaching in a PDS) indicating the discipline and grade level of the assignment(s). List current P-12 licensure or certification(s) held, if any.

SECTION II - LIST OF ASSESSMENTS

In this section, list the 6-8 assessments that are being submitted as evidence for meeting the NCTM standards. All programs must provide a minimum of six assessments. If your state does not require a state licensure test in the content area, you must substitute an assessment that documents candidate attainment of content knowledge in #1 below. For each assessment, indicate the type or form of the assessment and when it is administered in the program.

1. Please provide following assessment information (Response limited to 250 characters each field)

Type and Number of Assessment	Name of Assessment ⁽¹⁰⁾	Type or Form of Assessment ⁽¹¹⁾	When the Assessment Is Administered ⁽¹²⁾
Assessment #1: Licensure assessment, or other content-based assessment aligned to <i>NCTM</i> <i>NCATE</i> <i>Mathematics Content for Secondary</i> (required)	Illinois Certification Testing System Mathematics Content Area Test	Illinois State Licensure Test	Prior to admission
Assessment #2: Content knowledge in secondary mathematics aligned to <i>NCTM</i> <i>NCATE</i> <i>Mathematics Content for Secondary</i> (required)	Content Area Transcript Review	Transcript Analysis	Prior to admission
Assessment #3: Candidate ability to plan instruction (required)	Mathematics Instructional Unit Plan	Portfolio Rubric	Term II (SEC 514: Content Methods Course)
Assessment #4: Student teaching (required)	Mathematics Student Teaching Evaluation: Competency Appraisal	University teacher and Cooperating teacher assessment	Term III (Student Teaching/Internship)
Assessment #5: Candidate effect on student learning (required)	edTPA	Edtpa	End of Term III (Student Teaching/Internship)

Assessment #6: Content knowledge in secondary mathematics aligned to NCTM NCATE Mathematics Content for Secondary (required)	Illinois Certification Testing System Mathematics Content Area Test	Illinois State Licensure Test	Prior to admission
Assessment #7: Additional assessment that addresses NCTM standards (optional)	Technology Integration Lesson Plan	Portfolio Rubric	Term II (SEC 514 Content Methods Course)
Assessment #8: Additional assessment that addresses NCTM standards (optional)			

(11) Identify assessment by title used in the program; refer to Section IV for further information on appropriate assessment to include.

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

(13) 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).

SECTION III - RELATIONSHIP OF ASSESSMENT TO STANDARDS

1. Standard 1: Content Knowledge

	#1	#2	#3	#4	#5	#6	#7	#8
Effective teachers of secondary mathematics demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, connections, and applications within and among mathematical content domains.								
Preservice teacher candidates:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1a) Demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains (Number, Algebra, Geometry, Trigonometry, Statistics, Probability, Calculus, and Discrete Mathematics) as outlined in the <i>NCTM NCATE Mathematics Content for Secondary</i> .								

2. Standard 2: Mathematical Practices

	#1	#2	#3	#4	#5	#6	#7	#8
Effective teachers of secondary mathematics solve problems, represent mathematical ideas, reason, prove, use mathematical models, attend to precision, identify elements of structure, generalize, engage in mathematical communication, and make connections as essential mathematical practices. They understand that these practices intersect with mathematical content and that understanding relies on the ability to demonstrate these practices within and among mathematical domains and in their teaching.								
Preservice teacher candidates:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2a) Use problem solving to develop conceptual understanding, make sense of a wide variety of problems and persevere in solving them, apply and adapt a variety of strategies in solving problems confronted within the field of mathematics and other contexts, and formulate and test conjectures in order to frame generalizations.								
2b) Reason abstractly, reflectively, and quantitatively with attention to units, constructing viable arguments and proofs, and critiquing the reasoning of others; represent and model generalizations using mathematics; recognize structure and express regularity in patterns of mathematical reasoning; use multiple representations to model and describe mathematics; and utilize appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others.								
2c) Formulate, represent, analyze, and interpret mathematical models derived from real-world contexts or mathematical problems.								
2d) Organize mathematical thinking and use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences.								
2e) Demonstrate the interconnectedness of mathematical ideas and how they build on one another and recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts.								
2f) Model how the development of mathematical understanding within and among mathematical domains intersects with the mathematical practices of problem solving, reasoning, communicating, connecting, and representing.								

3. Standard 3: Content Pedagogy

#1 #2 #3 #4 #5 #6 #7 #8

Effective teachers of secondary mathematics apply knowledge of curriculum standards for mathematics and their relationship to student learning within and across mathematical domains. They incorporate research-based mathematical experiences and include multiple instructional strategies and mathematics-specific technological tools in their teaching to develop all students' mathematical understanding and proficiency. They provide students with opportunities to do mathematics – talking about it and connecting it to both theoretical and real-world contexts. They plan, select, implement, interpret, and use formative and summative assessments for monitoring student learning, measuring student mathematical understanding, and informing practice.

Preservice teacher candidates:

3a) Apply knowledge of curriculum standards for secondary mathematics and their relationship to student learning within and across mathematical domains.

3b) Analyze and consider research in planning for and leading students in rich mathematical learning experiences.

3c) Plan lessons and units that incorporate a variety of strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies in building all students' conceptual understanding and procedural proficiency.

3d) Provide students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace.

3e) Implement techniques related to student engagement and communication including selecting high quality tasks, guiding mathematical discussions, identifying key mathematical ideas, identifying and addressing student misconceptions, and employing a range of questioning strategies.

3f) Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by reflecting on mathematical proficiencies essential for all students.

3g) Monitor students' progress, make instructional decisions, and measure students' mathematical understanding and ability using formative and summative assessments.

#1	#2	#3	#4	#5	#6	#7	#8
		✓	✓	✓		✓	

4. Standard 4: Mathematical Learning Environment

#1 #2 #3 #4 #5 #6 #7 #8

Effective teachers of secondary mathematics exhibit knowledge of adolescent learning, development, and behavior. They use this knowledge to plan and create sequential learning opportunities grounded in mathematics education research where students are actively engaged in the mathematics they are learning and building from prior knowledge and skills. They demonstrate a positive disposition toward mathematical practices and learning, include culturally relevant perspectives in teaching, and demonstrate equitable and ethical treatment of and high expectations for all students. They use instructional tools such as manipulatives, digital tools, and virtual resources to enhance learning while recognizing the possible limitations of such tools.

Preservice teacher candidates:

4a) Exhibit knowledge of adolescent learning, development, and behavior and demonstrate a positive disposition toward mathematical processes and learning.

4b) Plan and create developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences.

4c) Incorporate knowledge of individual differences and the cultural and language diversity that exists within classrooms and include culturally relevant perspectives as a means to motivate and engage students.

4d) Demonstrate equitable and ethical treatment of and high expectations for all students.

4e) Apply mathematical content and pedagogical knowledge to select and use instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies (e.g., graphing tools, interactive geometry software, computer algebra systems, and statistical packages); and make sound decisions about when such tools enhance teaching and learning, recognizing both the insights to be gained and possible limitations of such tools.

#1	#2	#3	#4	#5	#6	#7	#8
		✓	✓	✓			

5. Standard 5: Impact on Student Learning

#1 #2 #3 #4 #5 #6 #7 #8

Effective teachers of secondary mathematics provide evidence demonstrating that as a result of their instruction, secondary students' conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and application of major mathematics concepts in varied contexts have increased. These teachers support the continual development of a productive disposition toward mathematics. They show that new student mathematical knowledge has been created as a consequence of their ability to engage students in mathematical experiences that are developmentally appropriate, require active engagement, and include mathematics-specific technology in building new knowledge.

Preservice teacher candidates:

5a) Verify that secondary students demonstrate conceptual understanding; procedural fluency; the ability to formulate, represent, and solve problems; logical reasoning and continuous reflection on that reasoning; productive disposition toward mathematics; and the application of mathematics in a variety of contexts within major

#1	#2	#3	#4	#5	#6	#7	#8
		✓	✓	✓		✓	

mathematical domains.

5b) Engage students in developmentally appropriate mathematical activities and investigations that require active engagement and include mathematics-specific technology in building new knowledge.

5c) Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students' mathematical proficiencies have increased as a result of their instruction.

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6. Standard 6: Professional Knowledge and Skills

#1 #2 #3 #4 #5 #6 #7 #8

Effective teachers of secondary mathematics are lifelong learners and recognize that learning is often collaborative. They participate in professional development experiences specific to mathematics and mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations.

Preservice teacher candidates:

6a) Take an active role in their professional growth by participating in professional development experiences that directly relate to the learning and teaching of mathematics.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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6b) Engage in continuous and collaborative learning that draws upon research in mathematics education to inform practice; enhance learning opportunities for all students' mathematical knowledge development; involve colleagues, other school professionals, families, and various stakeholders; and advance their development as a reflective practitioner.

6c) Utilize resources from professional mathematics education organizations such as print, digital, and virtual resources/collections.

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7. Standard 7: Secondary Mathematics Field Experiences and Clinical Practice

#1 #2 #3 #4 #5 #6 #7 #8

Effective teachers of secondary mathematics engage in a planned sequence of field experiences and clinical practice under the supervision of experienced and highly qualified mathematics teachers. They develop a broad experiential base of knowledge, skills, effective approaches to mathematics teaching and learning, and professional behaviors across both middle and high school settings that involve a diverse range and varied groupings of students. Candidates experience a full-time student teaching/internship in secondary mathematics directed by university or college faculty with secondary mathematics teaching experience or equivalent knowledge base.

Preservice teacher candidates:

7a) Engage in a sequence of planned field experiences and clinical practice prior to a full-time student teaching/internship experience that include observing and participating in both middle and high school mathematics classrooms and working with a diverse range of students individually, in small groups, and in large class settings under the supervision of experienced and highly qualified mathematics teachers in varied settings that reflect cultural, ethnic, linguistic, gender, and learning differences.

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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7b) Experience full-time student teaching/internship in secondary mathematics that is supervised by a highly qualified mathematics teacher and a university or college supervisor with secondary mathematics teaching experience or equivalent knowledge base.

7c) Develop knowledge, skills, and professional behaviors across both middle and high school settings; examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics; and observe and analyze a range of approaches to mathematics teaching and learning, focusing on tasks, discourse, environment, and assessment.

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SECTION IV - EVIDENCE FOR MEETING STANDARDS

DIRECTIONS: The 6-8 key assessments listed in Section II must be documented and discussed in Section IV. Taken as a whole, the assessments must demonstrate candidate mastery of the SPA standards. The key assessments should be required of all candidates. Assessments and scoring guides and data charts should be aligned with the SPA standards. This means that the concepts in the SPA standards should be apparent in the assessments and in the scoring guides to the same depth, breadth, and specificity as in the SPA standards. Data tables should also be aligned with the SPA standards. The data should be presented, in general, at the same level it is collected. For example, if a rubric collects data on 10 elements [each relating to specific SPA standard(s)], then the data chart should report the data on each of the elements rather than reporting a cumulative score.

In the description of each assessment below, the SPA has identified potential assessments that would be appropriate. Assessments have been organized into the following three areas to be aligned with the elements in NCATE's unit standard 1:

- Content knowledge (Assessments 1, 2 and 6)
- Pedagogical and professional knowledge, skills and dispositions (Assessments 3 and 4)
- Focus on student learning (Assessment 5)

Note that in some disciplines, content knowledge may include or be inextricable from professional knowledge. If this is the case, assessments that combine content and professional knowledge may be considered "content knowledge" assessments for the purpose of this report.

For each assessment, the compiler should prepare one document that includes the following items:

(1) A two-page narrative that includes the following:

- a. A brief description of the assessment and its use in the program (one sentence may be sufficient);
 - b. A description of how this assessment specifically aligns with the standards it is cited for in Section III. Cite SPA standards by number, title, and/or standard wording.
 - c. A brief analysis of the data findings;
 - d. An interpretation of how that data provides evidence for meeting standards, indicating the specific SPA standards by number, title, and/or standard wording;
- and

(2) Assessment Documentation

- e. The assessment tool itself or a rich description of the assessment (often the directions given to candidates);
- f. The scoring guide for the assessment; and
- g. Charts that provide candidate data derived from the assessment.

The responses for e, f, and g (above) should be limited to the equivalent of five text pages each, however in some cases assessment instruments or scoring guides may go beyond five pages.

Note: As much as possible, combine all of the files for one assessment into a single file. That is, create one file for Assessment #4 that includes the two-page narrative (items a – d above), the assessment itself (item e above), the scoring guide (item f above), and the data chart (item g above). Each attachment should be no larger than 2 mb. Do not include candidate work or syllabi. There is a limit of 20 attachments for the entire report so it is crucial that you combine files as much as possible.

1. State licensure test(s) or professional examinations of content knowledge. NCTM standards addressed in this entry could include Standards 1-2. If your state does not require licensure tests or professional examinations in the content area, data from another assessment aligned to NCTM NCATE Mathematics Content for Secondary must be presented to document candidate attainment of content knowledge. (Assessment Required)

Provide assessment information as outlined in the directions for Section IV

Q81507_Q81507_Assessment_1.doc

See **Attachment** panel below.

2. Assessment of content knowledge in mathematics. NCTM standards addressed in this assessment that is aligned to NCTM NCATE Mathematics Content for Secondary could include but are not limited to Standards 1-2. Examples of assessments include comprehensive examinations, GPAs or grades, and portfolio tasks⁽¹³⁾. For post-baccalaureate teacher preparation, include an assessment used to determine that candidates have adequate content background in the subject to be taught. (Assessment Required)

Provide assessment information as outlined in the directions for Section IV

Q81508_Assessment_2.doc

See **Attachment** panel below.

(14) For program review purposes, there are two ways to list a portfolio as an assessment. In some programs a portfolio is considered a single assessment and scoring criteria (usually rubrics) have been developed for the contents of the portfolio as a whole. In this instance, the portfolio would be considered a single assessment. However, in many programs a portfolio is a collection of candidate work—and the artifacts included.

3. Assessment that demonstrates candidates can effectively plan classroom-based instruction. NCTM standards that could be addressed in this assessment include but are not limited to Standard 3. Examples of assessments include the evaluation of candidates' abilities to develop lesson or unit plans, individualized educational plans, needs assessments, or intervention plans. (Assessment Required)

Provide assessment information as outlined in the directions for Section IV

Q81509_Assessment_3.doc

See **Attachment** panel below.

4. Assessment that demonstrates candidates' knowledge, skills, and dispositions are applied effectively in practice. NCTM standards that could be addressed in this assessment include but are not limited to Standards 3, 4, 6, and 7. An assessment instrument

used in student teaching or an internship should be submitted. (Assessment Required)

Provide assessment information as outlined in the directions for Section IV

Q81510_assessment_4.doc	Q81510_assessment_4_data.doc
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See **Attachment** panel below.

5. Assessment that demonstrates candidate effect on student learning. NCTM standards that could be addressed in this assessment include but are not limited to Standard 5. Examples of assessments include those based on student work samples, portfolio tasks, case studies, follow-up studies, and employer surveys. (Assessment Required)

Provide assessment information as outlined in the directions for Section IV

Q81511_assessment_5.doc	Math edtpa handbook.pdf
edtpa.pdf	

See **Attachment** panel below.

6. Assessment of content knowledge in mathematics. NCTM standards addressed in this assessment that is aligned to NCTM CAEP Mathematics Content for Secondary could include but are not limited to Standards 1-2. Examples of assessments include comprehensive examinations, GPAs or grades, and portfolio tasks.

Provide assessment information as outlined in the directions for Section IV

Q81512_Assessment_6.doc

See **Attachment** panel below.

7. Additional assessment that addresses NCTM standards. Examples of assessments include evaluations of field experiences, case studies, portfolio tasks, licensure tests not reported in #1, and follow-up studies. (Optional)

Provide assessment information as outlined in the directions for Section IV

Q81513_Assessment_7.doc

See **Attachment** panel below.

8. Additional assessment that addresses NCTM standards. Examples of assessments include evaluations of field experiences, case studies, portfolio tasks, licensure tests not reported in #1, and follow-up studies. (Optional)

Provide assessment information as outlined in the directions for Section IV

SECTION V - USE OF ASSESSMENT RESULTS TO IMPROVE PROGRAM

1. Evidence must be presented in this section that assessment results have been analyzed and have been or will be used to improve candidate performance and strengthen the program. This description should not link improvements to individual assessments but, rather, it should summarize principal findings from the evidence, the faculty's interpretation of those findings, and changes made in (or planned for) the program as a result. Describe the steps program faculty have taken to use information from assessments for improvement of both candidate performance and the program. This information should be organized around (1) content knowledge, (2) professional and pedagogical knowledge, skill, and dispositions, and (3) student learning.

(Response limited to 12,000 characters INCLUDING SPACES)

Content Knowledge
According to our experience teaching the mathematics content methods course, evaluating teacher candidates' instructional plans, and looking at the related items on the student teaching competency appraisal, we find that our teacher candidates possess appropriate content knowledge. We feel that the transcript review requirements along with the state content test score requirement (Assessment 1) assure the result of admitting candidates with sufficient mathematical background.

The secondary education department is working on strengthening school university partnerships with schools in the area. Candidates will be placed in schools for Practicum experience during the first and second quarters. Mentors will be assigned to each candidate who will represent the university; they will work closely with teachers in whose classes the students will be placed to design practicum activities, assignments, opportunities to practice teaching skills before the "high stakes" student teaching experience. An additional advantage of this

arrangement will be to develop close relationships with cooperating teachers, aligning practices and expectations in consideration of the needs of the field.

Professional and Pedagogical Knowledge, skill and Dispositions

We redesigned the mathematics methods course where this assessment is administered to incorporate CCSS, but also to improve candidates' performance in planning instruction. We provide more opportunities to practice and get feedback on the components of unit planning, such as, concept mapping, identifying big ideas of mathematical content topics, creating problem based lessons, posing questions to build mathematical understanding, designing formative assessment, etc. The high scores on the Mathematics Planning Rubric are evidence of our improved instruction. There are a few areas noteworthy of attention:

As noted in the previous section the candidates in the last two years have struggled with Resources. Looking back on the Unit Plan individual rubric scores it shows that the candidates who did not score well in the sub-area did so because they did not cite their references in APA format. In the future we need to make sure our candidates know what the APA format is and exactly how to document readings and other information using this format. In the future the candidates will be given a few assignments in the 514 class on practicing citing in APA.

The candidates for the last two years also struggled with the Performance Assessment sub-area. This could be due to a lack of experience with these types of assessments. In the future the instructors will provide more examples and explorations in creating performance assessments.

The program will continue to support our candidates' growth in the area of including technology in their teaching. The program will continue to spend time in each class focusing technology that is easily available on-line or through a minimal purchase price. In evaluating the technology the candidates will consider how this resource will support their teaching and support their students' varied needs. The program will demonstrate available tech resources that can enhance the candidates' content knowledge. The candidates will model activities using technology in whole class or small group settings. They will discuss these activities and the effect that the resource had on the students engagement and understanding. With each class having a recurring theme of how can tech be used to enhance learning, our candidates will learn to include these resources as much as possible in their daily teaching and practice.

Student Learning

As noted in the previous section there seemed to be a discrepancy between the scores for the university supervisors and the cooperating teachers. This may be due to the heightened expectations of our students at the university. The cooperating teachers may be interpreting the scoring rubric in a more practical setting as compared to a more literal interpretation by the university supervisors. While theoretically the scoring should be the same it does bring up an interesting situation of perception being influenced by context and surroundings. Another contributing factor is that the cooperating teachers are with the candidates for their entire student teaching experience. This is compared to the university supervisor who observes the candidate in the classroom on a more limited basis.

One area needing to be addressed is Professionalism. This is the only sub-area where the cooperation teachers scored the candidates lower than the university supervisors. The scores for the cooperating teachers actually went down from the semester to the final grade. In the future the university will make this a point of focus. Candidates may start off their student teaching giving 110% and striving to impress. As their experience goes on the candidates may become fatigued. The amount of time a new educator needs to put in to be prepared and to create interesting and engaging experiences can be daunting.

At the university we will support our candidates by spending more time on modeling engaging explorations, giving our students more resources where they can go to get ideas for creating lessons, focus more on time management ideas and continually explore what it means to be a professional educator and the expectations that come with this commitment.

To support improvement of our candidates' performance in the creation of their edtpa portfolios the 514 and 590 classes will create activities where the candidates are scoring given entrees by using the rubrics provided by the edtpa handbook. By using these rubrics the candidates will become more familiar with the expectations of what each task requires of them. They will learn the criteria of how their work will be scored. These activities will lead to explorations of how the candidates can improve their practice by incorporating the expectations of the edtpa into their creation, planning, questioning and facilitation of their daily experiences.

Additionally we will have the candidates video their work more often. These videos will be reviewed by the class or in small groups. The discussions the candidates will have with their colleagues will be invaluable. When reviewing the videos the candidates will discuss classroom management, questioning techniques, the variety of pedagogical approaches that could be used to facilitate the lesson, student engagement and other aspects of exemplary teaching.

SECTION VI - FOR REVISED REPORTS OR RESPONSE TO CONDITIONS REPORTS ONLY

1. For Revised Reports: Describe what changes or additions have been made to address the standards that were not met in the original submission. Provide new responses to questions and/or new documents to verify the changes described in this section. Specific instructions for preparing a Revised Report are available on the NCATE web site at <http://www.ncate.org/Accreditation/ProgramReview/ProgramReportSubmission/RevisedProgramReports/tabid/453/Default.aspx>

For Response to Conditions Reports: Describe what changes or additions have been made to address the conditions cited in the original recognition report. Provide new responses to questions and/or new documents to verify the changes described in this section. Specific instructions for preparing a Response to Conditions Report are available on the NCATE web site at <http://www.ncate.org/Accreditation/ProgramReview/ProgramReportSubmission/ResponsetoConditionsReport/tabid/454/Default.aspx>

(Response limited to 24,000 characters. INCLUDING SPACES)

Please click "Next"

This is the end of the report. Please click "Next" to proceed.