

**Program Report for the
Preparation of Secondary Mathematics Teachers
National Council of Teachers of Mathematics (NCTM)**

NATIONAL COUNCIL FOR ACCREDITATION OF TEACHER EDUCATION

C O V E R S H E E T

Institution _____ William Carey University _____ **State** _____ MS _____

Date submitted _____

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Program documented in this report:

Name of institution's program (s) Mathematics Teacher Education _____

Grade levels for which candidates are being prepared 7-12 _____

Degree or award level Bachelor of Science _____

Is this program offered at more than one site? Yes No

If yes, list the sites at which the program is offered _____

Title of the state license for which candidates are prepared

Program report status:

- Initial Review**
- Response to a Not Recognized Decision**
- Response to National Recognition With Conditions**
- Response to a Deferred Decision**

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 III. 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.

Academic programs that lead to teacher licensure must be accredited by the State of Mississippi using NCATE standards. In mathematics, NCATE, in turn, uses program standards from the NCTM for the initial preparation of mathematics teachers. At William Carey University, students preparing to teach mathematics at the secondary level must complete the major in mathematics. The program of study in mathematics correlates to the NCTM standards for secondary mathematics teachers.

2. Description of 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.

All students certifying to teach must complete EDU 300, Introduction and Foundations of Education. This course has an associated pre-teaching field experience component, consisting of 21 hours at a local school, done concurrently with the course. In addition, students must complete a 65-day student teaching component in a secondary school, working under the supervision of a teacher at the school site.

There are also courses in the mathematics curriculum with field components. Mathematics 209, Seminar II, requires a 21-hour field experience in local schools that involves individual tutoring and working with small groups. Mathematics 345, Teaching Mathematics in the Secondary School, requires a minimum of 12 hours of class experience.

3. Description of the criteria for admission, retention, and exit from the program, including required GPAs and minimum grade requirements for the content courses accepted by the program.

For admission to the program, students must have at least 2.5 GPA on the teacher education liberal arts core, must achieve a passing score on the Praxis I or have an ACT of 21 with no sub-score below an 18, and have at least a grade of C or better in both English composition courses, ENG 101-102.

Students must satisfy all requirements for entry into student teaching which include an overall GPA of at least a 2.5, grades of C or better in all professional education course and all courses in the specialty area, and achieve the required scores on the Praxis II (PLT and the specialty area). Students must satisfactorily complete the student teaching as well as all university requirements for completion of the program.

4. Description of the relationship¹ of the program to the unit's conceptual framework.

The statement of purpose for the mathematics program is to "provide instruction in a Christian environment that will enable students to develop an insight into mathematics theory and an understanding of the applications of mathematics that will prepare students to pursue an advanced degree or a career in a mathematics related field." Faculty work in a caring, Christian environment and provide leadership that enable students to become learners, thinkers, and decision-makers. We believe that a strong liberal arts core is the foundation for more advanced study and mathematics majors receive that foundation with either the bachelor of science or the bachelor of arts core.

The specialty area mathematics courses are structured, in terms of content, to address key areas of the NCTM standards: calculus, reasoning and proof, algebra, probability and statistics, and geometry. Specific references to these areas appear in the learning outcomes statements that are part of the departmental assessment program. Specific courses in these areas are required for math majors seeking teacher certification as listed in the Teacher Education Handbook. As mentioned earlier, there are courses within the mathematics curriculum that require field experience.

Although professional education training is primarily acquired outside the mathematics program, one course within the mathematics specialty area, Teaching Mathematics in the Secondary School, incorporates lesson planning, classroom management, motivational techniques, design of homework assignments, and test construction.

Technology is also incorporated into the mathematics curriculum. Every mathematics major is required to take a graphing calculator seminar which includes, not only the basic scientific operations, but graphing applications in basic algebra, statistics, and matrices. Other courses integrate the use of the Maple mathematics software.

The program description above shows a correlation to several key components of the conceptual framework, including liberal arts core, specialty area preparation, pre-service experience, professional education training, and technology. Moreover, as indicated in the first paragraph, the mission of the program itself is consistent with the goal of producing teachers who are caring, reflective decision-makers.

5. Indication of whether the program has a unique set of program assessments and their relationship of the program's assessments to the unit's assessment system².

The mathematics program has a set of learning objectives and program objectives that are assessed on an annual basis. The learning objectives relate to the key content areas mentioned in the previous paragraph. Assessment of learning objectives is done by use of the major field test, the Praxis II, and locally produced rubrics. Program objectives, however, correlate more closely with the unit's assessment system and include the number of completers who have found jobs in their field and the number who are pursuing a more advanced degree. Students are also provide feedback on the academic environment, giving responses that support the goal of producing caring, reflective decision-makers.

Note: Required data on program of study, candidates and completers, and faculty expertise and experience are provided in the attachments.

Section II – List of Assessments

	Name of Assessment	Type or Form of Assessment	When the Assessment Is Administered
1	Praxis II Math Content Knowledge	Comprehensive Exam	Student teaching
2	Major Field Test	Comprehensive Exam	Prior to graduation
3	Planning and Preparation (10 day unit)	Rubric – STAI	Student teaching
4	Student Teacher Assessment Instrument- Overall Rating – Supervising Teacher and Supervising Professor	Observation Analysis	Student teaching
5	Mississippi Teacher Education Performance Report	Employer Survey	End of first year of teaching
6	Student Teacher Assessment Instrument – Items 23-28 (Classroom Management) – Supervising Teacher and Supervising Professor Observations.	Observation Analysis	Student Teaching
7	Student Teacher Assessment Instrument – (Environment and Student Diversity) – Supervising Teacher Observations	Observation Analysis	Student Teaching
8	Program of Study	Locally produced rubrics	End of course

Section III – Relationship of Assessments to Standards

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
Mathematics Preparation for All Mathematics Teacher Candidates	
1. Knowledge of Problem Solving. Candidates know, understand and apply the process of mathematical problem solving. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 X#8
2. Knowledge of Reasoning and Proof. Candidates reason, construct, and evaluate mathematical arguments and develop an appreciation for mathematical rigor and inquiry. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 X#8
3. Knowledge of Mathematical Communication. Candidates communicate their mathematical thinking orally and in writing to peers, faculty and others. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 X#8
4. Knowledge of Mathematical Connections. Candidates recognize, use, and make connections between and among mathematical ideas and in contexts outside mathematics to build mathematical understanding. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
5. Knowledge of Mathematical Representation. Candidates use varied representations of mathematical ideas to support and deepen students’ mathematical understanding. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
6. Knowledge of Technology. Candidates embrace technology as an essential tool for teaching and learning mathematics. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
7. Dispositions. Candidates support a positive disposition toward mathematical processes and mathematical learning. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	<input type="checkbox"/> #1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 X#4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
8. Knowledge of Mathematics Pedagogy. Candidates possess a deep understanding of how students learn mathematics and of the pedagogical knowledge specific to mathematics teaching and learning [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	<input type="checkbox"/> #1 <input type="checkbox"/> #2 X#3 X#4 X#5 X#6 X#7 <input type="checkbox"/> #8
Mathematics Preparation for Secondary Level Mathematics Teacher Candidates	
9. Knowledge of Number and Operations. Candidates demonstrate computational proficiency, including a conceptual understanding of numbers, ways of representing number, relationships among number and number systems, and the meaning of operations. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 <input type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
10. Knowledge of Different Perspectives on Algebra. Candidates emphasize relationships among quantities including functions, ways of representing mathematical relationships, and the analysis of change. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
11. Knowledge of Geometries. Candidates use spatial visualization and geometric modeling to explore and analyze geometric shapes, structures, and their properties. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8
12. Knowledge of Calculus. Candidates demonstrate a conceptual understanding of limit, continuity, differentiation, and integration and a thorough background in techniques and application of the calculus. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]	X#1 X#2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/> #6 <input type="checkbox"/> #7 <input type="checkbox"/> #8

NCTM STANDARD	APPLICABLE ASSESSMENTS FROM SECTION II
<p>13. Knowledge of Discrete Mathematics. Candidates apply the fundamental ideas of discrete mathematics in the formulation and solution of problems. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]</p>	<p>X#1 X#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>14. Knowledge of Data Analysis, Statistics, and Probability. Candidates demonstrate an understanding of concepts and practices related to data analysis, statistics, and probability. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]</p>	<p>X#1 X#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 X#8</p>
<p>15. Knowledge of Measurement. Candidates apply and use measurement concepts and tools. [Indicators are listed at http://www.nctm.org/about/ncate/secondary_indic.htm]</p>	<p>X#1 <input type="checkbox"/>#2 <input type="checkbox"/>#3 <input type="checkbox"/>#4 <input type="checkbox"/>#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 <input type="checkbox"/>#8</p>
<p>16.1 Field-Based Experiences Engage in a sequence of planned opportunities prior to student teaching that includes observing and participating secondary mathematics classrooms under the supervision of experienced and highly qualified teachers.</p>	<p>Information should be provided in Section I (Context) to address this indicator.</p>
<p>16.2 Field-Based Experiences Experience full-time student teaching secondary-level mathematics that is supervised by an experienced and highly qualified teacher and a university or college supervisor with elementary mathematics teaching experience.</p>	<p>Information should be provided in Section I (Context) to address this indicator.</p>
<p>16.3 Field-Based Experiences Demonstrate the ability to increase students' knowledge of mathematics.</p>	<p><input type="checkbox"/>#1 <input type="checkbox"/>#2 X#3 X#4 X#5 <input type="checkbox"/>#6 <input type="checkbox"/>#7 X#8</p>

Section IV – Evidence for Meeting Standards

Assessment 1 Praxis II, Math Content Knowledge (0061)

1. Description of the assessment and its use in the program.

This assessment is an examination designed to assess the mathematical knowledge and competencies necessary for a beginning teacher in secondary school mathematics.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

Content categories for the Praxis II are algebra and number theory, measurement, geometry, trigonometry, functions, calculus, data analysis and statistics, probability, matrix algebra, and discrete mathematics. These address NCTM standards 9-15. Process categories for the Praxis II are mathematical problem solving, mathematical reasoning and proof, mathematical connections, mathematical representation, and use of technology. These address NCTM standards 1, 2, 4, 5, and 6.

3. Brief analysis of the data findings.

The passing score for the Praxis II in Mississippi is 123. For the last five years, all of the mathematics education students have passed the Praxis II. Our records show that all but two passed on the first try. The average of the passing scores was 137 and the average including the two failing scores was 134.

4. Interpretation of how that data provides evidence for meeting the standards.

Since the Praxis II directly addresses the standards listed, passing scores provide strong evidence that these standards have been met.

5. Assessment Documentation.

See attachments.

Assessment 2. Major Field Test (MFT) in Mathematics

1. Description of the assessment and its use in the program.

This assessment is a nationally normed exam from ETS used to measure achievement and growth in a particular subject area. This exam is available in 16 different academic areas, including mathematics. It measures not only factual knowledge but the ability to analyze and solve problems, understand relationships, and interpret material.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

Content categories for the MFT in mathematics are calculus (introductory and advanced), algebra (linear and abstract), real analysis, discrete mathematics, probability and statistics, point-set topology, geometry, differential equations, numerical analysis, and complex analysis. These address NCTM standards 10-14. Moreover, the problems analysis needed to answer questions on this exam address the areas of problem solving, reasoning, mathematical representation, and technology, or NCTM standards 1, 2, 5, and 6.

3. Brief analysis of the data findings.

The major field test in mathematics has been given annually since 1997. The average is compared to the individual scores from the approximately 200 institutions who participate. Our percentile ranking for the past three years for teacher education students is as follows: 2004-05: 13th percentile; 2005-06: 1^{3th} percentile; 2006-07: 51nd percentile. Data for all mathematics students is given as an attachment.

4. Interpretation of how that data provides evidence for meeting the standards.

The major field test is required of all mathematics majors; however, there is no set passing score for graduation. So, unlike the Praxis, students do not have an incentive to do their best. In the past two years, we have emphasized the importance of the major field test and have modified two of our mathematics seminars to function as a capstone courses. In these courses, student review major topics from the mathematics curriculum and give presentations. The dramatic improvement in performance for 2007 provides evidence that our students are meeting the NCTM standards.

5. Assessment documentation.

See attachments.

Assessment 3. Planning and Preparation (10 Day Unit) – STAI Rubric

1. Description of the assessment and its use in the program.

The Student Teacher Assessment Instrument (STAI) In-Class Evaluation is the observation tool used by the college faculty when observing student teachers in their final field practicum. Section G, Planning and Preparation (10 Day Written Unit) is designed to assess the student teacher’s ability to build integrated units incorporating teaching procedures, student objectives within the Mississippi Curriculum Frameworks and District Benchmarks, appropriate materials and technology, developmentally age-appropriate assessments of student performance (including authentic assessments), and accommodations for learning differences.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

The alignment of the assessment with specific SPA standards addressed by the assessment, as they are identified in Section III.

3. Brief analysis of the data findings

The analysis of the data findings is displayed in the chart below.

Student Teacher Assessment Instrument, Student Teachers
College Supervisor
2005-2006

4=Outstanding, Effective Practice 3= Acceptable, Safe to Practice
2=Marginally Acceptable Practice 1=Ineffective, Unacceptable Practice

G. Planning and Preparation – 10 Day Unit		
39.	Title Page (STAI Unit, unit title, your name, date, grade level, subject area, college supervisor).	3.93
40.	The teacher selects and uses appropriate student objectives for unit	

	lessons. Each objective should be labeled to a level of Bloom's Taxonomy and referenced to district or state benchmarks.	3.86
41.	The teacher selects and uses appropriate teaching procedures for unit lessons. Should have at least one cooperative learning activity.	3.86
42.	The teacher selects and uses appropriate supplementary materials and technology for unit lessons.	3.86
43.	The teacher selects and uses appropriate materials and procedures for a minimum of four assessments of student progress. A variety of assessment types should be used in addition to an attitudinal questionnaire.	3.70
44.	The teacher uses information about students to provide learning experiences which accommodate differences in developmental and educational needs. Include objectives for remedial and/or advanced students.	3.72

4. Interpretation of how that data provides evidence for meeting the standards.

The outcome was met in all indicators. Indicator 40, Writing Student Objectives incorporating Bloom's taxonomy, was met at a 3.86 as was Indicator 41, Teaching procedures (3.86), and Indicator 42, Materials and Technology (3.86). Indicator 43, Authentic Assessments (3.70) and Indicator 44, Accommodating Differences (3.72) were the lowest. While meeting the objective of 3.5, it remains a concern for faculty that assessments and accommodations are still areas of relative difficulty for our student teachers.

5. Assessment Documentation – Documentation in the School of Education Exhibit Room.

Assessment 4. Student Teacher Assessment Instrument – Overall Rating – Supervising Teacher and Supervising Professor.

1. Description of the assessment and its use in the program.

The Student Teacher Assessment Instrument (STAI) is the In-Class Evaluation used by the Supervising Teacher and the College Supervisor when evaluating student teacher performance. There are five categories of student teacher performance evaluated by the College Supervising Professor: (1) Affective Beginning/Anticipatory Set; (2) Teaching; (3) Time on Task; (4) Interpersonal Skills; and (5) Assessment. The student teacher is evaluated on a scale of 1-4; 1 describes Ineffective, Unacceptable Practice; 2 describes Marginally Acceptable Practice; 3 describes Acceptable, Safe to Practice (Standard); and 4 describes Outstanding, Effective Practice. The STAI for the Supervising Teacher has five categories: (1) Planning and Preparation; (2) Communication and Interaction; (3) Teaching for Learning; and (4) Assessment of Student Learning. The STAI (both formative and summative) becomes the key diagnostic instrument used to build the professional development program for student teachers. The data has been collected over the past two academic years allowing the faculty to formulate new initiatives in curriculum and field practica to improve overall student performance.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

The alignment of the assessment with the specific SPA standards addressed by the assessment, as they are identified in section III.

3. Brief analysis of the data findings.

The analysis of the data findings is displayed in the chart below.

School of Education - William Carey College Student Teacher Assessment Instrument (STAI) Supervising Teacher (2004-2006)			
Planning and Preparation		04-05 Mean	05-06 Mean
1	The teacher selects and uses appropriate student objects for unit lessons.	3.93	3.96
2	The teacher selects and uses appropriate teaching procedures for unit lessons.	3.89	3.96
3	The teacher selects and uses appropriate supplementary materials and technology for unit lessons.	3.89	3.80
4	The teacher uses information about students to provide learning experiences which accommodate difference in developmental and education needs.	3.91	3.86
5	The teacher uses knowledge of students' backgrounds, interests, experiences, and prior knowledge to make instruction relevant and meaningful.	3.86	3.85
6	The teacher integrates knowledge from several subject areas in unit lessons.	3.84	3.85
7	The teacher incorporates multicultural perspectives into teaching units.	3.80	3.77
Communication and Interaction			
8	The teacher uses correct oral and written communication.	3.84	3.87
9	The teacher relates concepts using clear handwriting and appropriate language which is easily understood by and respectful toward others.	3.91	3.90
10	The teacher provides clear, complete directions for carrying out instructional activities.	3.82	3.86
11	The teacher communicates high expectations for learning to all students.	3.91	3.87
12	The teacher projects enthusiasm for teaching and learning.	3.89	3.85
13	The teacher listens to students and demonstrates interest in what they are saying by responding appropriately.	3.91	3.94
14	The teacher provides opportunities for students to work cooperatively with others to enhance learning.	3.86	3.96
15	The teacher meets and responds appropriately to parents/guardians.	3.76	3.87
Teaching For Learning			
16	The teacher demonstrates knowledge of the subject(s) taught.	3.94	3.87
17	The teacher uses a variety of appropriate teaching strategies.	3.91	3.87
18	The teacher provides opportunities for students to apply concepts in problem solving and critical thinking.	3.82	3.82
19	The teacher elicits and responds to student input.	3.89	3.96
20	The teacher probes, allows sufficient and equitable wait time, and encourages students to expand and support their responses.	3.80	3.86
21	The teacher uses questions to engage students in original, creative, and higher order thinking.	3.77	3.79
22	The teacher uses family and/or community resources in the student teaching experience to enhance student learning.	3.73	3.79
Assessment of Student Learning			
29	The teacher informs students of performance standards and assessment criteria.	3.86	3.96
30	The teacher provides timely feedback regarding academic performance and discusses corrective procedures to be taken.	3.86	3.90

31	The teacher provides opportunities for students to assume responsibility for learning and to engage in self-evaluation.	3.89	3.89
32	The teacher maintains records of student work/ performance and communicates progress to both parents and/or guardians and appropriate colleagues.	3.84	3.89
33	The teacher actively seeks opportunities to grow reflectively and professionally.	3.86	3.96

Student Teacher Assessment Instrument, Student Teachers College Supervisor

4=Outstanding, Effective Practice 3= Acceptable, Safe to Practice
2=Marginally Acceptable Practice 1=Ineffective, Unacceptable Practice

A. Affective Beginning/Anticipatory Set		04-05	05-06
1.	Teacher has materials and equipment ready.	3.90	3.98
2.	Teacher uses motivational, thought provoking, or unusual happening.	3.80	3.83
3.	Teacher reviews previous lesson and/or past experiences.	3.90	3.92
4.	Teacher states lesson purpose and plan.	3.88	3.92
5.	Teacher states importance/relevancy of lesson, and has students personalize lesson/relate importance of content to real life.	3.83	3.76
B. Teaching		04-05	05-06
6.	Teacher provides clear, concise and accurate information.	3.88	3.92
7.	Teacher clarifies expectations through models, rubrics and/or example.	3.85	3.93
8.	Teacher checks for understanding.	3.88	3.97
9.	Teacher uses instructional aids skillfully.	3.88	3.96
10.	Teacher gives clear verbal/written directions which are easily understood.	3.85	3.92
11.	Teacher provides opportunity for critical thinking and/or problem-solving.	3.83	3.90
12.	Teacher monitors individual / group learning, re-teaching when necessary.	3.90	3.96
13.	Teacher provides relevant independent and individual practice.	3.98	3.93
14.	Teacher provides appropriate closure to lesson.	3.80	3.86
C. Time on Task		04-05	05-06
15.	Teacher uses instructional time efficiently.	3.88	3.96
16.	Teacher keeps students on task through participation/ involvement.	3.83	3.90
17.	Teacher uses effective transitions within lesson and group changes.	3.90	3.89
18.	Teacher maintains learner involvement with pacing/ varied activities.	3.85	3.94
E. Interpersonal Skills		04-05	05-06
26.	Teacher is eager (facial expression, time, voice, gesture, etc.).	3.93	3.97

27.	Teacher uses proximity, moves around the room.	3.94	3.96
28.	Teacher demonstrates patience and empathy for rates of learning.	3.98	4.00
29.	Teacher shows sensitivity to learning styles of students.	3.90	3.97
30.	Teacher uses acceptable oral/written grammar.	3.78	3.86
31.	Teacher's pronunciation is clear and distinct.	3.95	3.96
32.	Teacher uses acceptable handwriting on board, handouts, materials, etc.	3.85	3.97
33.	Teacher matches methods to both the learners and objectives.	3.90	3.97
34.	Teacher incorporates student responses in discussion or lesson.	3.95	3.97
35.	Teacher sequences topics / procedures appropriately for flow of lesson.	3.96	4.00
36.	Teacher uses a variety of teaching methods and strategies (2 or 3).	3.93	3.98
37.	Teacher responds positively to students' academic input.	3.95	3.97
F. Assessment		04-05	05-06
38.	Teacher expands beyond workbook and worksheets.	3.95	3.90

4. Interpretation of how that data provides evidence for meeting the standards.

All student teacher performance indicators met the objective of 3.5 or higher. With over 70 students in the field, this is a fairly accurate assessment of the entire program. When comparing Supervising Teacher scores with the College Supervisor scores, there were no significant differences. It is the conclusion of the student teacher faculty that the student teachers are being provided a strong pre-professional development program that is preparing them to enter the profession as "safe to practice" teacher candidates.

5. Assessment Documentation – Documentation in the School of Education Exhibit Room.

Assessment 5. Mississippi Teacher Education Performance Report

1. Description of the assessment and its use in the program.

The Mississippi Teacher Education Report provides detailed data concerning first year teacher performance as assessed by a self-reflection teacher questionnaire and a complementary principal's evaluation report on the first year teacher performance. This data is aggregated and analyzed by the institution. This is the School of Education's major assessment instrument for following teacher graduates into their first year of teaching.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

The alignment of the assessment with the specific SPA standards addressed by the assessment, as they are identified in Section III.

3. Brief analysis of the data findings.

Due to dissemination difficulties at the state level, The Mississippi Teacher Education Performance Report produced minimal results (only 5 were reported to William Carey University). The sparse data proved to be difficult to use for the purposes of analysis. The five teachers who were represented in the data exceeded 95% in their overall ratings by the administrators. This reflected only 5% of the possible pool of WCU graduates who were presently holding contracts in Mississippi schools.

4. Interpretation of how that data provides evidence for meeting the standards.

The performance objective will be continued into 2006-2007 with no change in the performance goals. The State Department of Education reported that the impact of Katrina had created a serious problem with data collection during the 2005-2006 academic year. Online surveys and the technology infrastructure have been improved for the 2006-2007 academic year.

5. Assessment Documentation – Documentation in the School of Education Exhibit Room.

Assessment 6. Student Teacher Assessment Instrument – Items 23-28 (Classroom Management) – Supervising Teacher and Supervising Professor Observations.

1. Description of the assessment and its use in the program.

The Student Teacher Assessment Instrument (STAI) is the In-Class Evaluation used by the Supervising Teacher and the College Supervisor when evaluating student teacher performance. There are two critical categories of student teacher performance evaluated by the College Supervising Professor and Supervising Teacher: (1) Management of the Learning Environment and (2) Classroom Environment. The student teacher is evaluated on a scale of 1-4; 1 describes Ineffective, Unacceptable Practice; 2 describes Marginally Acceptable Practice; 3 describes Acceptable, Safe to Practice (Standard); and 4 describes Outstanding, Effective Practice. The STAI (both formative and summative) becomes the key diagnostic instrument used to build the professional development program for student teachers in constructing a learning community with an effective classroom management program. The data has been collected over the past two academic years allowing the faculty to formulate new initiatives in curriculum and field practica to improve classroom management through differentiated instruction, multiple intelligences training, and effective classroom procedures.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

The alignment of the assessment with the specific SPA standards addressed by the assessment, as they are identified in Section III.

3. Brief analysis of the data findings.

The analysis of the data findings is displayed in the chart below.

School of Education - William Carey College Student Teacher Assessment Instrument (STAI) Supervising Teacher (2004-2006)				
Management of the Learning Environment			04-05	05-06
23	The teacher monitors and adjusts the classroom environment to enhance social relationships, motivation, and learning.		3.82	3.95
24	The teacher adjusts unit lessons according to individual student and group responses.		3.89	4.00
25	The teacher attends to and delegates routine tasks of an effective classroom management plan.		3.77	3.95
26	The teacher uses a variety of discipline strategies effectively, according to individual and situational needs.		3.70	3.85
27	The teacher is fair and supportive of students, resulting in a positive interactive learning environment.		3.89	4.00
28	The teacher uses instructional time effectively.		3.75	3.90

Student Teacher Assessment Instrument
Student Teachers, College Supervisor

4=Outstanding, Effective Practice 3= Acceptable, Safe to Practice
2=Marginally Acceptable Practice 1=Ineffective, Unacceptable Practice

D. Classroom Environment		04-05	05-06
19.	Teacher creates instructive and interactive bulletin boards.	3.80	3.96
20.	Teacher expresses high expectations both verbally and non-verbally.	3.80	3.95
21.	Teacher conveys behavioral expectations to students.	3.88	3.97
22.	Teacher posts rules and consequences.	3.92	3.96
23.	Teacher creates positive climate through acceptance, appropriate wait time, and encouragement of creativity and risk taking.	3.87	3.87
24.	Teacher monitors behavior through positive remarks.	3.94	3.87
25.	Teacher maintains proper classroom management and discipline.	3.87	3.93

4. Interpretation of how that data provides evidence for meeting the standards.

The objective will be continued through the 2006-2007 academic year. Data for the College Supervisors indicated improvement in five of the seven areas. There was a decrease in Monitoring Behavior 2005-3.94 to 2006-3.87 and no change in Positive Climate 2005-3.87 to 2006-3.87. Data for the Teacher Supervisors indicated significant improvements in all six indicators. EDU 436 Classroom Management will be adding a new supplemental text, "Stepping into My Teacher Shoes", designed to focus on Positive Climate and Monitoring Behavior.

5. Assessment Documentation – Documentation in the School of Education Exhibit Room.

Assessment 7. Student Teacher Assessment Instrument – (Environment and Student Diversity) – Supervising Teacher Observations.

1. Description of the assessment and its use in the program.

The STAI Indicators (Interpersonal Skills) evaluate student teacher performance in the area of differentiated instruction. Indicator 28 is empathy for rates of learning. Indicator 29 is sensitivity to individual learning styles. Indicator 33 matches methods to learners. Indicator 36 assesses the student teacher's ability to use a variety of methods and strategies. Indicator 37 measures the student teacher's positive responses to the learner's performance.

2. Description of how this assessment specifically aligns with the standards it is cited for in section III.

The alignment of the assessment with the specific SPA standards addressed by the assessment, as they are identified in Section III.

3. Brief Analysis of Data Findings.

The analysis of the data findings is displayed in the chart below.

Student Teacher Assessment Instrument, Student Teachers
College Supervisor

4=Outstanding, Effective Practice 3= Acceptable, Safe to Practice
2=Marginally Acceptable Practice 1=Ineffective, Unacceptable Practice

E. Interpersonal Skills		2004	2005
28.	Teacher demonstrates patience and empathy for rates of learning.	3.98	4.00
29.	Teacher shows sensitivity to learning styles of students.	3.90	3.97
33.	Teacher matches methods to both the learners and objectives.	3.90	3.97
36.	Teacher uses a variety of teaching methods and strategies (2 or 3).	3.93	3.98
37.	Teacher responds positively to students' academic input.	3.95	3.97

4. . Interpretation of how that data provides evidence for meeting the standards.

The objective was met with all indicators showing an increase from 2004-2005 to 2005-2006. The faculty determined to continue this objective for the 2006-2007 academic year. *The Measures of Differentiated Instruction Survey* will administered in the Spring of 2007 to all undergraduates. This survey measures the level of information and application of the principles of differentiated instruction by teacher candidates. Based on the survey data, program revisions may be considered for the Summer 2007 term.

5. Assessment Documentation – Documentation in the School of Education Exhibit Room.

Assessment 8. Program of Study

1. Description of the assessment and its use in the program.

In addition to the Praxis II and the Major Field test, measured achievement in courses throughout mathematics curriculum address whether or not students are meeting the NCTM standards. Rubrics are used to objectively assess and provide feedback on certain areas related to those standards. Rubrics were used in MAT 309, Seminar III, to assess oral and written communication and consisted of ratings from 1 to 4 (not acceptable to excellent) in 6 categories: background information, organization of presentation, clarity of presentation, ability to explain/answer questions, completeness, and quality of written materials. Ratings were given by the instructor and by students in the class.

Rubrics were used in MAT 337, Mathematical Statistics, to measure how well the learning outcomes stated in the syllabus were being met. Ratings were based on final exam questions that correlated to the learning outcome statements and were scored using a scale from 1 to 4 (not acceptable to excellent).

2. Description of how this assessment specifically aligns with the standards it is cited for in Section III.

This assessment is cited for use with NCTM standards 3, communication, and standard 14, probability and statistics. The data comes from assessment rubrics used MAT 309 , Seminar III, and MAT 337, Mathematical Statistics.

3. Brief analysis of the data findings.

a. Analysis of the data from MAT 309 communication rubric is shown in the following chart.

Presentation Assessment Rubric

MAT 309 Seminar III

	Instructor assessment	Peer Assessment
Background Information	2.8	3.9
Organization of Presentation	3	3.6
Clarity of Presentation	3	3.4
Ability to explain, answer questions	2.7	3.5
Completeness of presentation	2.8	3.8
Quality of written materials	2.8	3.8

b. Analysis of data from MAT 337 statistics rubric is shown in the following chart.

Statistics Assessment Rubric
MAT 337 Mathematical Statistics

Has understanding of the significance of a statistic and distinguishes between point and sampling statistics.	1.7
Distinguishes between descriptive and inferential statistics; discrete and continuous statistics.	2.6
Understands use of statistical measures for analyzing data and the use of graphical means to represent data.	2.6
Understands the concept of probability in the most general terms and its relationship to classical probability and combinatorics.	2.6
Understands the notion of random variables and their distributions as mathematical objects, and distinguishes between discrete and continuous random variables.	2.6
Is able to utilize the knowledge of discrete distributions in applications.	1.2
Understands the normal distribution, the central limit theorem, and can utilize this distribution in applications.	1.3
Understands how the knowledge of a given distribution leads to confidence intervals and can utilize this knowledge in applications.	1.3
Knows the connection between confidence intervals and hypothesis testing and can utilize this understanding in applications.	2
Can utilize knowledge of correlation and regression theory in applications.	3.1

4. Interpretation of how data provides evidence for meeting standards.

The data from the communication rubric, from both the perspective of the instructor and from the students in the class, indicate that math students are meeting standard 3. The data from the statistics rubric, combined with scores from the Praxis and MFT, indicate that standard 14 is being met; however, the rubric points an area of weakness in the area of probability distributions.

5. Assessment Documentation – Documentation in the School of Education Exhibit Room.

Section V. Use of Assessment Results to Improve Candidate and Program Performance

In the areas of content knowledge and student learning, the Department of Mathematics at William Carey University has maintained an assessment program going back to 1995. For each year, we state objectives, assessment criteria, assessment results, and how results are used to improve the program. Data is collected from exit interviews, graduate follow-up surveys, major field test results, and Praxis II scores. In 2006-2007, we began to distinguish between student learning outcomes and program objectives, and tied the learning outcomes to NCTM standards.

The assessment results presented in this document point out the need for having well-defined learning outcomes for each course and the value of rubrics tied to those objectives as a way of pointing out deficiencies (as well as strengths) in key areas. Similar rubrics are being developed and utilized, with a goal of incorporation throughout the mathematics curriculum. The assessment results also point out the value of a capstone experience, as shown by the improvement in Major Field Test scores. The capstone experience is being reviewed with the goal of expanding and enhancing that component of the program.

Although the improvement in student performance on the ETS Major Field Test is encouraging, we need to assess our curriculum in order to improve further. The basic core of required courses for mathematics majors has remained basically the same for several years and there are major subject areas in mathematics that are not covered. Also, there are two courses mentioned in section I, MAT 345 and MAT 209, that address professional education training. MAT 345 incorporates lesson planning, test construction, and other topics related to teacher preparation while MAT 209 contains a field experience component where students do tutoring in local schools. The MAT 209, however, is not required by all of our majors. Math majors are required to select three out of four 1-hour seminars and they may or may not select MAT 209. While students in the teacher education program typically take this course, we need to address this requirement to ensure that majors who are in the teacher education will have the kind of field experience associated with this particular course.

Attachments. Section I

Program of Study Attachment

WILLIAM CAREY COLLEGE DEPARTMENT OF EDUCATION
DEGREE CHECKLIST: CERTIFICATION AREA—MATHEMATICS

Name _____ SS Number _____

PRAXIS I: Reading (170)(CBT 316) _____ Writing (172)(CBT 318) _____ Mathematics (169)(CBT 314) _____
OR

ACT (21): _____ (English(18) _____ Mathematics(18) _____ Reading(18) _____ Science/Reasoning(18) _____
AND PRAXIS II: PLT _____ Area Specialty _____

BACHELOR OF SCIENCE TEACHER EDUCATION CORE (44 hours)

ENG 101 (3) _____ Soc. Sci (3) _____
ENG 102 (3) _____ (SOC 101, 111, PSC 201) _____
ENG 211 (3) _____ Lab Sci (4) _____
ENG 212 (3) _____ Lab Sci (4) _____
Fine Arts (3) _____ PHY SCI (3) _____
(MUM 101, ART200, THE 135) _____ MAT 131 (3) _____
HIS 101 or 201 _____ PSY 201 (3) _____
HIS 102 or 202 _____ COM 101 (3) _____

Total Quality Points _____ divided by 44 = _____ GPA

ADDITIONAL CORE/TEACHER EDUCATION REQUIREMENTS (27-29 hours)

REL 101 (3) _____ BUS 102 (3) _____
REL 102 (3) _____ PSY 203 (3) _____
PED _____ (1) _____ PSY 204 (3) _____
PED _____ (1) _____ Elec _____ (3) _____
Elec _____ (3) _____ Elec _____ (3) _____
Elec _____ (3) _____ Eng. Prof. _____

MATHEMATICS SPECIALTY COURSES (33 hours)

MAT 109 (1) _____ MAT 335 (3) _____
MAT 209, 309, _____ MAT 336 or 337 (3) _____
and/or 409 (2) _____ MAT 341 (3) _____
MAT 151 (3) _____ MAT 436 (3) _____
MAT 152 (3) _____ MAT 441/342/338 (3) _____
MAT 251 (3) _____ MAT Elec (3) _____
MAT 252 (3) _____ (Courses numbered above 252)

PROFESSIONAL EDUCATION (27 hours)

EDU 300 (3) _____ * EDU 436 (3) _____
EDU 300.1 (0) _____ * EDU 450 (3) _____
EDU 372 (3) _____ * EDU 484 (12) _____
* EDU 446 or MAT 345 (3) _____ (must have passing scores on PRAXIS II prior to EDU 484)

*admission to Teacher Education required

Student teaching application _____ Student teaching semester _____ rev. 7/04

ATTACHMENT A
Candidate Information

Program: Mathematics Teacher Education -Secondary		
Academic Year	# of Candidates Enrolled in the Program	# of Program Completers
2006-07	23	2
2005-06	25	4
2004-05	17	2

ATTACHMENT B
Faculty information

Faculty Member Name	Highest Degree, Field, & University	Assignment: Indicate the role of the faculty member	Faculty Rank	Tenure Track (Yes/No)	Scholarship,³ Leadership in Professional Associations, and Service: List up to 3 major contributions in the past 3 years	Teaching or other professional experience in P-12 schools
Cloyd Ezell	Ph.D. Mathematics, Vanderbilt University	Department Chair	Professor	Yes		
Charlotte McShea	Ph.D. Mathematics, University of Texas	Faculty	Professor	Yes	Faculty Advisor, Kappa Mu Epsilon	
Gaston Smith	Ph.D. University of Alabama, Mathematics	Adjunct Faculty	Adjunct Professor	No		

MATHEMATICS: CONTENT KNOWLEDGE (0061) ** ROE: 165

AK -146	AL -126	AR -116	CO -156	CT -137
DC -141	DE -141	HI -136	ID -119	IN -136
KS -137	KY -125	LA -130	MD -141	ME -126
MN -125	MO -137	MS -123	NC - ^e	ND -139
NH -127	NJ -137	NV -133	OH -139	OR -138
PA -136	SC -131	SD -124	TN -136	UT -138
VA -147	VT -141	WA -134	WI -135	WV -133
WY -*				

ATTACHMENT C
Candidate Data Derived from the Assessment

Praxis Scores
Program Completers, 2003-
2007

Student	Score	Notes
1	155	
2	123	
3	141	
4	146	
5	137	
6	144	
7	103	
7	131	Retake
8	134	
9	126	
10	129	
11	151	
12	137	
13	120	
13	130	Retake
Average	133.8	Including failing scores

Assessment 2 Major Field Test - Mathematics

ATTACHMENT A Assessment Tool or Description of Assignment

MATHEMATICS (4AMF)

(Current form introduced in January 2004)

The Major Field Test in Mathematics consists of 50 questions, some of which may be grouped in sets and based on such materials as diagrams and graphs. The questions are drawn from the courses of study most commonly offered as part of an undergraduate mathematics curriculum.

The outline below shows the content areas covered on the test and the approximate distribution of questions among the areas.

- I. Calculus (30 percent) (The usual material of 3 semesters of calculus including single and multivariable calculus.)
- II. Algebra (30 percent)
 - A. Linear Algebra
 - 1. Matrices
 - 2. Linear transformations
 - 3. Characteristic polynomials
 - 4. Eigenvalues and eigenvectors
 - 5. Vector spaces
 - 6. Systems of linear equations
 - B. Abstract Algebra
 - 1. Elementary theory of groups, rings, and fields
 - 2. Elementary topics from number theory
- III. Additional Topics (40 percent)
 - A. Advanced calculus (The standard subjects of an advanced calculus/beginning analysis course, including limits, Cauchy sequences, and general convergence of sequences, series and functions. All problems in either single or multivariable calculus are classified as regular calculus problems.)
 - B. Real analysis (including topology of the real line)
 - C. Discrete mathematics (graph theory and combinatorics)
 - D. Probability and statistics
 - E. Dynamical systems
 - F. Point-set topology

- G. Geometry (Euclidean, non-Euclidean, and differential geometry)
- H. Differential equations (The standard subjects in a one semester course on differential equations that are not covered in the calculus sequence. Problems such as exponential decay are classified as calculus problems.)
- I. Numerical analysis
- J. Complex analysis

The relative percentages of mathematics questions at various cognitive levels is as follows:

- i. Routine (55 percent)

Involves only two or three definitions and no more than a two-step reasoning process; or involves standard techniques normally taught and practiced extensively in a course that is generally required or strongly recommended for all math majors at most institutions.

- ii. Nonroutine (25 percent)

Includes all items that are considered insightful. Also includes items that require several steps of reasoning and items that require either the use of several definitions or a "new" definition which the student would not be expected to know. Some questions may require bringing techniques from two or more areas to bear on one problem, *e.g.*, treating functions from calculus as elements of an algebraic system.

- iii. Applied (20 percent)

There is conceptual overlap between "Applied" and "Routine-Nonroutine." Into which of these categories a given question is placed depends primarily on the general nature of the question. For example, all "real world" settings are placed in the "Applied" category. On the other hand, standard applications of one area of mathematics to another (such as using differential calculus to solve geometric problems about the slope of tangent lines to curves) would not be placed in the "Applied" category.

ATTACHMENT B Scoring Guide for the Assessment



**Major Field
Tests**

Listening, Learning, Leading.

Major Field Test in Mathematics
Individual Students Total Score Distribution
Data Includes Seniors from Domestic Institutions --- February 2004 to December 2006

Total Score Range (120 - 200)	% at or below
191 - 200	95
190	
189	
188	
187	
186	
185	
184	
183	
182	
181	
180	
179	
178	
177	
176	
175	
174	
173	
172	
171	
170	80
169	
168	
167	
166	
165	
164	
163	
162	
161	
160	
159	
158	
157	
156	
155	
154	
153	
152	
151	
150	
149	
148	
147	
146	
145	
144	
143	
142	
141	
140	
139	
138	
137	
136	
135	
134	
133	
132	
120 - 131	5

Number of Examinees	3766
Mean	155.6
Median	152.0
Standard Deviation	17.7

Total Scores are reported as *scaled scores*.
% at or below based on percent below the lower limit of the score interval.

ATTACHMENT C
Candidate Data Derived from the Assessment

MFT
Scores

2004-05 2005-06 2006-07

All math
students

Student	Score	Student	Score	Student	Score
1	140	1	140	1	149
2	149	2	131	2	152
3	125	3	146	3	137
4	137	4	146	4	158
5	137	5	120	5	164
Average		137.6		136.6	
Percentile ranking		9		6	
				49	

Math Ed.
Students

Student	Score	Student	Score	Student	Score
1	140	1	131	1	149
4	137	4	146	2	152
				4	158
Average		138.5		138.5	
Percentile ranking		13		13	
				51	