

Unit Missions

MAT Mission Statement

Mission statement

The purposes of the Department of Mathematics are to prepare teachers of mathematics for the elementary and secondary schools, to provide a foundation for professional careers in mathematics, and to provide for the mathematical needs of the general student.

Learning Outcomes

BS-MAT 01: LO Proficiency in College Algebra

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Demonstrate proficiency in basic knowledge of College Algebra topics.

Data Collection (Evidence)

The final examination in MAT 104 College Algebra will be used to determine the level of mastery of the topics in College Algebra. The examination is written each semester by a committee of faculty members who do not teach the course during that particular semester, and the examination material covers specific course objectives which have been defined by a committee of departmental faculty. All college algebra students take this common final examination during an exam period that is dedicated solely to this course. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength.

Results of Evaluation

An analysis of the fall 2012 semester examination, given by objective, is shown in the following table. The objective number corresponds to the published objectives for College Algebra (MAT 104). The final examination questions were matched to these thirteen objectives. The number of students that demonstrated mastery of each objective was computed. (The list of the course objectives is included in the appendix.)

Objective Number	Mastery Percentage	Number of exam questions for that objective
1	54	9
2	56	3
3	71	3
4	60	4
5	37	3
6	76	3
7	45	3
8	41	4
9	58	4
10	53	4
11	37	3
12	47	5
13	36	2

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Use of Evaluation Results

Based on the analysis from the 2008 – 2009 academic year, the final exam in the fall 2009 was completely reworked in terms of the number of questions, the number of questions which address each objective, and the directions for each question. Only minor changes were made for the fall 2012 exam. Each objective in this year's exam was tested with at least three questions with the exception of Objective 13. This objective incorporates a very particular type of problem and is a minor portion of the course as a whole. The directions and types of problems included in the exam came directly from the homework problem sets; this method of choosing exam questions was used so that the students would have problems to work which were identical to those which they had been used to seeing in their preparations for tests.

When compared with the mastery level listed in the 2011 – 2012 report, the students appear to have done better on all objectives except one. A decline is noted in objective 5 after having shown improvement in the previous year. It should be noted that improvement was shown on objectives 1, 3, 6, 7, 8, 10, 11 and 12 which were targeted in the evaluation from the fall 2011 data.

All sections of MAT 104 have retained much of the redesign proposed by this department to IHL and the National Center for Academic Transformation (NCAT). The students had some lecture time in which the course content was presented. The textbook and accompanying software package (Hawkes Learning System) were used by the students. All homework, quizzes, and unit tests were completed using the computer software. Before a student could take a unit test, the student had to complete a practice test covering the same topics and make the minimum required score. This was done to ensure that the students had prepared for the unit tests. The faculty noticed an improvement in the unit test scores for students who had prepared for the tests in this way. The faculty are continuing to explore means of improvement of student performance in the coming academic year.

Related Items



GE 01: Critical and Creative Thinking



GE 02: Communication



GE 03: Quantitative Skills

BS-MAT 02: LO Understanding fundamentals of mathematics

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Demonstrate understanding of fundamental ideas, concepts, and applications of mathematics.

Data Collection (Evidence)

Delta State University FY2013 Unit Level Report

Department: Mathematics

The capstone course for students in the BS program is MAT 490. In this course, the students read a variety of articles which included but were not limited to biographical writings about contemporary mathematicians, research articles, and articles about current topics in mathematics.

Additionally, the students explored mathematical questions in a research setting to understand better what research mathematicians do.

The department requires that each student complete the ETS Major Field Test.

ETS Major Field Test Content Areas:

1. Calculus
2. Algebra (linear and abstract)
3. Other topics: advanced calculus, real analysis, discrete mathematics, probability and statistics, dynamical systems, point-set topology, geometry, differential equations, numerical analysis, and complex analysis.

Results of Evaluation

The students summarized four articles to be included in their portfolios. Each student made a presentation and led a class discussion on two of the chosen articles. The students learned skills in communicating complex ideas as well as learning how to approach new material with only limited knowledge of foundational ideas.

The students were engaged in trying to solve a problem about which they had no significant prior knowledge or justify an outcome of a problem about which they had no prior knowledge. The solution processes required the students to incorporate and integrate knowledge from several subject areas in order to resolve the problem.

At the beginning of the 2010 – 2011 academic year, the department reset the required minimum score on the Major Field Test. Based on the results of the previous year, it was decided that a minimum of 134 from the previous year would be raised to 140. It was believed that this was reasonable for our students considering that content is included on this test which is not covered in any of the classes which we offer at Delta State. Although this was considered a low score, the department determined that for the second year with a minimum requirement, this was reasonable. For the 2012 – 2013 year, the faculty determined to keep the score at 140. Four BS students took the test, and one student completed it successfully (161) on the first attempt. Two of the students completed the test successfully on the second attempt. The scores in the order in which they were attained for these students were 136 and 161 and 133 and 161. The fourth student completed the test successfully on the third attempt; the scores for this student were 123, 133, and 167. The department is concerned that the students are not seriously preparing for this assessment. Review sessions were held in the spring semester for any student preparing for the Major Field Test.

Use of Evaluation Results

Delta State University FY2013 Unit Level Report

Department: Mathematics

The students were successful in reading and summarizing the articles. In the future, articles will continue to be chosen based on the students' areas of interest.

Research-type questions will continue to be chosen based on the ability of the students as well as their interests and career goals. Connections between various branches of mathematics will continue to be stressed in the major content courses in the major.

The department is still trying to determine the best time for students to take this test. Although a couple of formal review sessions were held prior to the test this year, the department is considering holding additional review sessions next year to help the students prepare for the test. It should be noted that not all of the BS students who took the test this year took full advantage of individual tutoring to prepare for the exam. Also, the department is concerned that the students may not be taking this test seriously.

Related Items

-  **GE 01: Critical and Creative Thinking**
-  **GE 02: Communication**
-  **GE 03: Quantitative Skills**
-  **GE 04: Inquiry and Technology**
-  **GE 08: Perspectives**

BS-MAT 03: LO Communication of mathematical ideas

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Demonstrate the ability to communicate mathematics.

Data Collection (Evidence)

In each of the 400-level mathematics content courses, the students will read an article from the area of content covered in that particular course. The articles will be chosen by a committee of the faculty who teach those courses. Each student will write a synopsis of the article and also include a critique. Approximately 50 – 75% of the summary should be devoted to the content of the article, and the remainder should be devoted to the critique. The summary should demonstrate that the reader understands the mathematical content and purpose of the article. The grading of the summaries will be done by a committee of faculty who teach the 400-level content courses as prescribed by a rubric developed by the faculty members on this committee.

Results of Evaluation

Article summaries were written in six classes during the 2012 – 2013 year (MAT 405, 411, 415, 425, 442, and 443). The committee read a total of thirty-three summaries during the course of the year and graded them according to the rubric. On a scale of 0 to 5, the scores ranged from 0 to 5. The average was 3.09. Twenty-two of the students scored 3 or higher on this assignment. The committee noted that the students who have had experience with this type of assignment tended to produce a higher quality paper. The committee also noted that the type of article given to the classes is a major factor in the overall class scores for one of these assignments. (See the appendix for the rubric.)

 [Appendix](#)

Use of Evaluation Results

The department will continue to use this type of writing assessment by gathering data in all 400-level courses each semester. We will track those who made below 3 on the first assessment and look for improvement in later assignments. We are now using this assignment in all 400-level courses. It was noted again this year in the capstone course (MAT 490) that this type of assignment in the prior courses made the writing more manageable when creating documents to be included in the students' portfolios

Related Items



GE 01: Critical and Creative Thinking



GE 02: Communication

 **BSE-MAT 01: LO Proficiency in College Algebra**

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Demonstrate proficiency in basic knowledge of College Algebra topics.

Data Collection (Evidence)

The final examination in MAT 104 College Algebra will be used to determine the level of mastery of the topics in College Algebra. The examination is written each semester by a committee of faculty members who do not teach the course during that particular semester, and the examination material covers specific course objectives which have been defined by a committee of departmental faculty. All college algebra students take this common final examination during an exam period that is dedicated solely to this course. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength.

Results of Evaluation

An analysis of the fall 2012 semester examination, given by objective, is shown in the following table. The objective number corresponds to the published objectives for College Algebra (MAT 104). The final examination questions were matched to these thirteen objectives. The number of students that demonstrated mastery of each objective was computed. (The list of the course objectives is included in the appendix.)

Objective Number	Mastery Percentage	Number of exam questions for that objective
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1	54	9
2	56	3
3	71	3
4	60	4
5	37	3
6	76	3
7	45	3
8	41	4
9	58	4
10	53	4
11	37	3
12	47	5
13	36	2

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Use of Evaluation Results

Based on the analysis from the 2008 – 2009 academic year, the final exam in the fall 2009 was completely reworked in terms of the number of questions, the number of questions which address each objective, and the directions for each question. Only minor changes were made for the fall 2012 exam. Each objective in this year’s exam was tested with at least three questions with the exception of Objective 13. This objective incorporates a very particular type of problem and is a minor portion of the course as a whole. The directions and types of problems included in the exam came directly from the homework problem sets; this method of choosing exam questions was used so that the students would have problems to work which were identical to those which they had been used to seeing in their preparations for tests.

When compared with the mastery level listed in the 2011 – 2012 report, the students appear to have done better on all objectives except one. A decline is noted in objective 5 after having shown improvement in the previous year. It should be noted that improvement was shown on objectives 1, 3, 6, 7, 8, 10, 11 and 12 which were targeted in the evaluation from the fall 2011 data.

All sections of MAT 104 have retained much of the redesign proposed by this department to IHL and the National Center for Academic Transformation (NCAT). The students had some lecture time in which the course content was presented. The textbook and accompanying software package (Hawkes Learning System) were used by the students. All homework, quizzes, and unit tests were completed using the computer software. Before a student could take a unit test, the student had to complete a practice test covering the same topics and make the minimum required score. This was done to ensure that the students had prepared for the unit tests. The faculty noticed an improvement in the unit test scores for students who had prepared for the tests in this way. The faculty are continuing to explore means of improvement of student performance in the coming academic year.

Related Items



GE 01: Critical and Creative Thinking



GE 02: Communication



GE 03: Quantitative Skills

BSE-MAT 02: LO Understanding fundamentals of mathematics

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Demonstrate understanding of fundamental ideas, concepts, and applications of mathematics.

Data Collection (Evidence)

Each student in the BSE program must pass the Praxis Math Content Test.

The department requires that each student complete the ETS Major Field Test.

ETS Major Field Test Content Areas:

1. Calculus
2. Algebra (linear and abstract)
3. Other topics: advanced calculus, real analysis, discrete mathematics, probability and statistics, dynamical systems, point-set topology, geometry, differential equations, numerical analysis, and complex analysis.

Results of Evaluation

The state department for licensure of teachers determines the passing score, and this score was raised from 123 to 128. This change went into effect in September 2012. Two students took the content test with one passing on the first attempt (prior to September 1, 2012). The passing score was 127.

At the beginning of the 2010 – 2011 academic year, the department reset the required minimum score on the Major Field Test. Based on the results of the previous year, it was decided that a minimum of 134 from the previous year would be raised to 140. It was believed that this was reasonable for our students considering that content is included on this test which is not covered in any of the classes which we offer at Delta State. Although this was considered a low score, the department determined that for the second year with a minimum requirement, this was reasonable. For the 2012 – 2013 year, the faculty determined to keep the score at 140. Two BSE students took the test, and no one completed it successfully on the first attempt. The scores for these students were 133 and 158 and 133 and 148. The department is concerned that the students are not seriously preparing for this assessment. Review sessions were held in the spring semester for any student preparing for the Major Field Test.

Use of Evaluation Results

The department will assist students in reviewing the content courses taken early in their program prior to the taking of the test (Praxis II).

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The department is still trying to determine the best time for students to take this test (Major Field Test). Although a couple of formal review sessions were held prior to the test this year, the department is considering holding additional review sessions next year to help the students prepare for the test. Also, the department is concerned that the students may not be taking this test seriously.

Related Items

 **GE 01: Critical and Creative Thinking**

 **GE 02: Communication**

 **GE 03: Quantitative Skills**

 **GE 04: Inquiry and Technology**

 **GE 08: Perspectives**



BSE-MAT 03: LO Communication of mathematical ideas

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Demonstrate the ability to communicate mathematics.

Data Collection (Evidence)

In each of the 400-level mathematics content courses, the students will read an article from the area of content covered in that particular course. The articles will be chosen by a committee of the faculty who teach those courses. Each student will write a synopsis of the article and also include a critique. Approximately 50 – 75% of the summary should be devoted to the content of the article, and the remainder should be devoted to the critique. The summary should demonstrate that the reader understands the mathematical content and purpose of the article. The grading of the summaries will be done by a committee of faculty who teach the 400-level content courses as prescribed by a rubric developed by the faculty members on this committee.

Results of Evaluation

Article summaries were written in six classes during the 2012 – 2013 year (MAT 405, 411, 415, 425, 442, and 443). The committee read a total of thirty-three summaries during the course of the year and graded them according to the rubric. On a scale of 0 to 5, the scores ranged from 0 to 5. The average was 3.09. Twenty-two of the students scored 3 or higher on this assignment. The committee noted that the students who have had experience with this type of assignment tended to produce a higher quality paper. The committee also noted that the type of article given to the classes is a major factor in the overall class scores for one of these assignments. (See the appendix for the rubric.)

-  [Appendix](#)

Use of Evaluation Results

The department will continue to use this type of writing assessment by gathering data in all 400-level courses each semester. We will track those who made below 3 on the first assessment and look for improvement in later assignments. We are now using this assignment in all 400-level courses. It was noted again this year in the capstone course for the mathematics majors (MAT 490) that this type of assignment in the prior courses made the writing more manageable when creating documents to be included in the students' portfolios.

Related Items



GE 01: Critical and Creative Thinking



GE 02: Communication

BSE-MAT 04: LO Teaching mathematics

Start: 7/1/2012

End: 6/30/2013

Providing Department: Mathematics

Learning Outcome

Performs appropriate mathematics teaching skills.

Data Collection (Evidence)

This year the department continued the use of the Teacher Intern Assessment Instrument, the IHL mandated scoring instrument that last year replaced the Student Teacher Assessment Instrument (STAI). TIAI scores by both the supervisor and cooperating teacher were examined. These scores are based on written lesson plans for an entire unit as well as observation of the teaching of actual lessons throughout the spring semester. The possible scores were:

0 - unacceptable

1 - emerging

2 - acceptable

3 – target

When the cooperating and supervising teacher differed in their scores, the graduate was awarded the higher score.

Also considered were the scores in the Teacher Work Sample (TWS). This instrument allows the teacher intern not only to record both their efforts to develop lesson plans that meet the needs of all students, but also to reflect on their impact on student learning and to explore possibilities for future lessons. The possible scores were:

1 - indicator not met

2 - indicator partially met

3 - indicator met

Only the supervising teacher scored this rubric.

A Mathematics Specific Addendum was added in which nineteen indicators, specific to the teaching of mathematics, were used to assess the candidates during the internship.

The possible scores were

1 – unacceptable

2 – acceptable

3 - target

Since this is the first year for this instrument to be used, there is no data for comparison.

Results of Evaluation

Three interns were evaluated for the 2012-2013 school year; all three interned in the fall semester and none interned in the spring semester. On the TIAI, these three graduates scored at least a 2 (acceptable) on all 34 indicators with a few exceptions. A score of 0 (unacceptable) on indicators #6 and #8, and a score of 1 (emerging) on indicators #7, #8, #12, #14, and #23 were the only scores below 2. (Note: Not all of the teacher candidates scored below 2 on these six indicators.) On all five sections of the TIAI [planning and preparation (indicators 1-9), communication and interaction (indicators 10-15), teaching for learning (indicators 16-23), management of the learning environment (indicators 24-29), and assessment of student learning (indicators 30-34)] the scores were 2 (acceptable) and 3 (target).

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On the eight rubrics of the TWS [contextual factors, learning goals, assessment plan, design for instruction, instructional decision making, analysis of student learning, reflection and self-evaluation, and design for instruction in secondary education], the graduates' scores were again 2's and 3's with no one scoring below 2.

The three interns were assessed using the Mathematics Specific Addendum. Each intern scored at least 2 (acceptable) on all nineteen of the indicators with a couple of exceptions. One intern scored 1 (unacceptable) on indicator #7.1 and two interns scored 1 (unacceptable) on indicator #8.6.

Use of Evaluation Results

For the TIAI:

This is the fourth year to use the IHL mandated Teacher Intern Assessment Instrument to evaluate our teacher interns. The scores on all indicators of the final draft of the TIAI tell us that we are preparing our candidates to be excellent teachers. The fact that only a few of the scores were unacceptable indicates that we are preparing them to make a difference in their classrooms in all five areas measured by the TIAI (see above). Our graduates continue the tradition of meeting the performance goals set for teacher candidates, that is, the scores for the past years on the TIAI are fairly constant. This same data is reported in the SPA report for the university's report to NCATE. The data is monitored on an annual basis, and if there are indicators on which most of our interns score a 2, or acceptable score, the department will need to make changes in its courses to enable the candidates to earn a 3, that is, a target score.

There were a few indicators on the first draft of the TIAI that were either unacceptable (0) or emerging (1). These were generally in areas in which almost all interns struggle, such as incorporating diversity and multiculturalism into the classroom, making consistent contact with parents, and using community resources. The supervising and cooperating teachers worked with the interns to remedy most of these deficiencies.

For the TWS:

Again, the scores indicate that we are preparing our interns to be successful teachers. The graduates are able to analyze their students' needs and the environment and use this data to prepare meaningful lessons that integrate content from other areas of mathematics as well as other subject areas. The interns demonstrated "a positive impact on student learning," that is, the differences in the pre- and post-test scores of their students indicated that learning occurred. The candidates were also able to analyze their assessment results to inform future lessons and their own professional development. The indicator that requires the use of research results remains an area that we need to emphasize.

The scores received on the indicators for the Mathematics Specific Addendum indicate that the interns are able to communicate the mathematics content effectively to the students in the classroom. Because this is the second year for this instrument to be used in the assessment process, data over the next few years will be important for comparison purposes.

Related Items



GE 01: Critical and Creative Thinking



GE 02: Communication



GE 04: Inquiry and Technology

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 **GE 09: Cross-disciplinary Appreciation**

 **GE 10: Values**

Gen Ed Learning Outcomes

MAT 103 GE 01: Critical and Creative Thinking

Start: 7/1/2012

End: 6/30/2013

Gen Ed learning outcome (competency)

Developing sound analytical and reasoning skills and the ability to use them to think critically, solve problems, analyze logically and quantitatively, and effectively respond to change

Data Collection

The final examination in MAT 103 Quantitative Reasoning will be used to determine the level of mastery of the topics in this course. The examination is a comprehensive assessment of the course content. All questions on the examination are linked to the specific course objectives which have been defined by the departmental faculty. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength. (The course objectives are found in the Appendix.)

Results of Evaluation

An analysis of the fall 2012 semester examination, given by course objective, is shown in the following table. The objective number corresponds to the published objectives for Quantitative Reasoning (MAT 103). The final examination questions were matched to these nine objectives. The number of students, expressed as a percentage, who demonstrated mastery of each objective was computed. (The list of course objectives is included in the appendix. Course objectives 1 – 9 address General Education Competency 01.

Objective Number	Mastery Percentage	Number of exam questions for that objective
1	64.60	23
2	64.29	13
3	37.50	2
4	53.97	18
5	46.43	13
6	52.86	5
7	48.45	23
8	41.96	4
9	44.78	13

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Use of Results

Each course objective was on this year's exam was tested with at least three questions with the exception of objective 3. This objective incorporates a particular type of problem and is a minor portion of the course content as a whole. Those objectives for which the mastery level was below fifty percent will be

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examined for possible revision of course content and teaching methodology for the 2013 – 2014 school year. Additional stress will be placed on the teaching of these specific objectives in order to improve the performance of the students in these areas.

Related Items

 **GE 01: Critical and Creative Thinking**

 **MAT_103_GE 02: Communication**

Start: 7/1/2012

End: 6/30/2013

Gen Ed learning outcome (competency)

Developing skills to communicate effectively through reading, writing, speaking, and listening

Data Collection

The final examination in MAT 103 Quantitative Reasoning will be used to determine the level of mastery of the topics in this course. The examination is a comprehensive assessment of the course content. All questions on the examination are linked to the specific course objectives which have been defined by the departmental faculty. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength. (The course objectives are found in the Appendix.)

Results of Evaluation

An analysis of the fall 2012 semester examination, given by course objective, is shown in the following table. The objective number corresponds to the published objectives for Quantitative Reasoning (MAT 103). The final examination questions were matched to these nine objectives. The number of students, expressed as a percentage, who demonstrated mastery of each objective was computed. (The list of course objectives is included in the appendix. Course objective 7 addresses General Education Competency 02.

Objective Number	Mastery Percentage	Number of exam questions for that objective
7	48.45	23

-  [Appendix](#)

Use of Results

Because communication is an important skill in all aspects of a student’s life whether in school or following the student’s matriculation from the educational institution, it is essential that a student in mathematics be able to communicate effectively the meaning of the results of a mathematical problem. Although the students are expected to be able to interpret and communicate results in the course, communication is not taught in the course. For this reason, General Education Competency 02 is being deleted from the competencies identified for this course in the next year (2013 – 2014).



MAT_103_GE 03: Quantitative Skills

Start: 7/1/2012

End: 6/30/2013

Gen Ed learning outcome (competency)

Enhancing abilities for symbolic and numeric reasoning and the ability to use and understand statistical and other quantitative techniques to interpret data

Data Collection

The final examination in MAT 103 Quantitative Reasoning will be used to determine the level of mastery of the topics in this course. The examination is a comprehensive assessment of the course content. All questions on the examination are linked to the specific course objectives which have been defined by the departmental faculty. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength. (The course objectives are found in the Appendix.)

Results of Evaluation

An analysis of the fall 2012 semester examination, given by course objective, is shown in the following table. The objective number corresponds to the published objectives for Quantitative Reasoning (MAT 103). The final examination questions were matched to these nine objectives. The number of students, expressed as a percentage, who demonstrated mastery of each objective was computed. (The list of course objectives is included in the appendix. Course objectives 1 – 9 address General Education Competency 03.

Objective Number	Mastery Percentage	Number of exam questions for that objective
1	64.60	23
2	64.29	13
3	37.50	2
4	53.97	18
5	46.43	13
6	52.86	5
7	48.45	23
8	41.96	4
9	44.78	13

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Use of Results

Each course objective was on this year's exam was tested with at least three questions with the exception of objective 3. This objective incorporates a particular type of problem and is a minor portion of the course content as a whole. Those objectives for which the mastery level was below fifty percent will be examined for possible revision of course content and teaching methodology for the 2013 – 2014 school year. Additional stress will be placed on the teaching of these specific objectives in order to improve the performance of the students in these areas.

Related Items

 **GE 03: Quantitative Skills**

MAT_104_GE 01: Critical and Creative Thinking

Start: 7/1/2012

End: 6/30/2013

Gen Ed learning outcome (competency)

Developing sound analytical and reasoning skills and the ability to use them to think critically, solve problems, analyze logically and quantitatively, and effectively respond to change

Data Collection

The final examination in MAT 104 College Algebra will be used to determine the level of mastery of the topics in College Algebra. The examination is written each semester by a committee of faculty members who do not teach the course during that particular semester, and the examination material covers specific course objectives which have been defined by a committee of departmental faculty. All college algebra students take this common final examination during an exam period that is dedicated solely to this course. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength.

Results of Evaluation

An analysis of the fall 2012 semester examination, given by objective, is shown in the following table. The objective number corresponds to the published objectives for College Algebra (MAT 104). The final examination questions were matched to these thirteen objectives. The number of students that demonstrated mastery of each objective was computed. (The list of the course objectives is included in the appendix.) All thirteen of the course objectives address General Education Competency 01.

Objective Number	Mastery Percentage	Number of exam questions for that objective
1	54	9
2	56	3
3	71	3

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4	60	4
5	37	3
6	76	3
7	45	3
8	41	4
9	58	4
10	53	4
11	37	3
12	47	5
13	36	2

-  [Appendix](#)

Use of Results

Based on the analysis from the 2008 – 2009 academic year, the final exam in the fall 2009 was completely reworked in terms of the number of questions, the number of questions which address each objective, and the directions for each question. Only minor changes were made for the fall 2012 exam. Each objective in this year's exam was tested with at least three questions with the exception of Objective 13. This objective incorporates a very particular type of problem and is a minor portion of the course as a whole. The directions and types of problems included in the exam came directly from the homework problem sets; this method of choosing exam questions was used so that the students would have problems to work which were identical to those which they had been used to seeing in their preparations for tests.

When compared with the mastery level listed in the 2011 – 2012 report, the students appear to have done better on all objectives except one. A decline is noted in objective 5 after having shown improvement in the previous year. It should be noted that improvement was shown on objectives 1, 3, 6, 7, 8, 10, 11 and 12 which were targeted in the evaluation from the fall 2011 data.

All sections of MAT 104 have retained much of the redesign proposed by this department to IHL and the National Center for Academic Transformation (NCAT). The students had some lecture time in which the course content was presented. The textbook and accompanying software package (Hawkes Learning System) were used by the students. All homework, quizzes, and unit tests were completed using the computer software. Before a student could take a unit test, the student had to complete a practice test covering the same topics and make the minimum required score. This was done to ensure that the students had prepared for the unit tests. The faculty noticed an improvement in the unit test scores for students who had prepared for the tests in this way. The faculty are continuing to explore means of improvement of student performance in the coming academic year. The faculty are also exploring the possibility of administering the final exam via computer rather than the traditional pencil-and-paper test in the future.

Related Items

 **GE 01: Critical and Creative Thinking**

 **MAT_104_GE 02: Communication**

Start: 7/1/2012

End: 6/30/2013

Gen Ed learning outcome (competency)

Developing skills to communicate effectively through reading, writing, speaking, and listening

Data Collection

The final examination in MAT 104 College Algebra will be used to determine the level of mastery of the topics in College Algebra. The examination is written each semester by a committee of faculty members who do not teach the course during that particular semester, and the examination material covers specific course objectives which have been defined by a committee of departmental faculty. All college algebra students take this common final examination during an exam period that is dedicated solely to this course. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength.

Results of Evaluation

An analysis of the fall 2012 semester examination, given by objective, is shown in the following table. The objective number corresponds to the published objectives for College Algebra (MAT 104). The final examination questions were matched to these thirteen objectives. The number of students that demonstrated mastery of each objective was computed. (The list of the course objectives is included in the appendix.) Course objective 5 addresses General Education Competency 02.

Objective Number	Mastery Percentage	Number of exam questions for that objective
5	37	3

-  [Appendix](#)

Use of Results

Based on the analysis from the 2008 – 2009 academic year, the final exam in the fall 2009 was completely reworked in terms of the number of questions, the number of questions which address each objective, and the directions for each question. Only minor changes were made for the fall 2012 exam. The objective related to this learning outcome in this year’s exam was tested with three questions. The directions and types of problems included in the exam came directly from the homework problem sets; this method of choosing exam questions was used so that the students would have problems to work which were identical to those which they had been used to seeing in their preparations for tests. When compared with the mastery level listed in the 2011 – 2012 report, the students appear to have done better on all objectives except one. A decline is noted in objective 5 after having shown improvement in the previous year. Although the students are expected to be able to interpret and communicate results in the course, communication is not taught in the course. For this reason, General Education Competency 02 is being deleted from the competencies identified for this course in the next year (2013 – 2014).

Related Items

 **GE 02: Communication**

 **MAT_104_GE 03: Quantitative Skills**

Start: 7/1/2012

End: 6/30/2013 \

Gen Ed learning outcome (competency)

Enhancing abilities for symbolic and numeric reasoning and the ability to use and understand statistical and other quantitative techniques to interpret data

Data Collection

The final examination in MAT 104 College Algebra will be used to determine the level of mastery of the topics in College Algebra. The examination is written each semester by a committee of faculty members who do not teach the course during that particular semester, and the examination material covers specific course objectives which have been defined by a committee of departmental faculty. All college algebra students take this common final examination during an exam period that is dedicated solely to this course. Following the administration of the final exam, an item analysis will be performed to determine areas of weakness and strength.

Results of Evaluation

An analysis of the fall 2012 semester examination, given by objective, is shown in the following table. The objective number corresponds to the published objectives for College Algebra (MAT 104). The final examination questions were matched to these thirteen objectives. The number of students that demonstrated mastery of each objective was computed. (The list of the course objectives is included in the appendix.) All thirteen of the course objectives address General Education Competency 03.

Objective Number	Mastery Percentage	Number of exam questions for that objective
1	54	9
2	56	3
3	71	3
4	60	4
5	37	3
6	76	3
7	45	3
8	41	4
9	58	4
10	53	4
11	37	3
12	47	5
13	36	2

-  [Appendix](#)

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Use of Results

Based on the analysis from the 2008 – 2009 academic year, the final exam in the fall 2009 was completely reworked in terms of the number of questions, the number of questions which address each objective, and the directions for each question. Only minor changes were made for the fall 2012 exam. Each objective in this year's exam was tested with at least three questions with the exception of Objective 13. This objective incorporates a very particular type of problem and is a minor portion of the course as a whole. The directions and types of problems included in the exam came directly from the homework problem sets; this method of choosing exam questions was used so that the students would have problems to work which were identical to those which they had been used to seeing in their preparations for tests.

When compared with the mastery level listed in the 2011 – 2012 report, the students appear to have done better on all objectives except one. A decline is noted in objective 5 after having shown improvement in the previous year. It should be noted that improvement was shown on objectives 1, 3, 6, 7, 8, 10, 11 and 12 which were targeted in the evaluation from the fall 2011 data.

All sections of MAT 104 have retained much of the redesign proposed by this department to IHL and the National Center for Academic Transformation (NCAT). The students had some lecture time in which the course content was presented. The textbook and accompanying software package (Hawkes Learning System) were used by the students. All homework, quizzes, and unit tests were completed using the computer software. Before a student could take a unit test, the student had to complete a practice test covering the same topics and make the minimum required score. This was done to ensure that the students had prepared for the unit tests. The faculty noticed an improvement in the unit test scores for students who had prepared for the tests in this way. The faculty are continuing to explore means of improvement of student performance in the coming academic year. The faculty are also exploring the possibility of administering the final exam via computer rather than the traditional pencil-and-paper test in the future.

Related Items

 **GE 03: Quantitative Skills**

Unit Goals

MAT 2013_01: Improvement of writing skills

Start: 7/1/2012

End: 6/30/2013

Unit Goal

To improve the writing skills of all mathematics majors.

Evaluation Procedures

The department will monitor the pass/fail rate on the Writing Proficiency Exam and on the writing component of the Praxis.

Actual Results of Evaluation

	2005 – 2006	2009 – 2007	2007 – 2008	2008 – 2009	2009 - 2010	2010 – 2011	2011 – 2012	2012 – 2013
Test	Pass - Fail							
WPE	6 - 1	0 - 3	1 - 2	3 - 0	3 - 4	1 - 2	1 - 1	2 - 0
Praxis Writing	0 - 0	3 - 0	3 - 0	2 - 0	2 - 0	4 - 1	0 - 0	2 - 1

In the 2012 – 2013 academic year, both students who took the writing proficiency exam passed this assessment.

When looking at the data for the past five years, there is no trend in the pass/fail numbers for the writing proficiency exam.

In one year, each student failed the test, but in another year, each student passed.

In the current academic year, three students took the writing portion of Praxis I.

Two of the students passed this examination, and one student did not make the minimum required score.

Use of Evaluation Results

The Department of Mathematics will continue to make a more concerted effort to implement the following plans to try to improve the writing ability of our students. 1. Each faculty member will include at least one question on each test in upper level classes that requires students to provide written explanations of concepts. Evaluation of the answers to such questions will include mathematical content and also spelling, grammar, and sentence construction.

2. All classes above the 200 level that are taken by mathematics majors will require writing in the form of written projects and essay portions of the exams. The written projects will concern an important concept in the course and may include reading and summarizing mathematics articles. Students should turn in a rough draft, receive feedback from the instructor, and then turn in a final draft. These projects will be graded for content and writing.

A comparison of samples collected in the classes will be made to determine if individual students are improving.

We expect to see continued improvement in the writing skills of our majors as we continue to stress the importance of writing in our classes over the course of the semesters in which our majors are enrolled. If there is no improvement, we will work with the writing lab to try to assist our students in improving their writing skills.

Related Items

 **SP1.Ind02: National / Standardized Test Scores**

 **GE 02: Communication**

MAT 2013_02: Using technology

Start: 7/1/2012

End: 6/30/2013

Unit Goal

Prepare students to teach using appropriate technology and prepare students who will enter the work force in non-teaching jobs to function in today's technology dependent society.

Evaluation Procedures

MAT 099 (Intermediate Algebra) was taught using a traditional teaching method with classroom lectures and practice problems and some in-class examples coming from the textbook. Other examples are presented in a manner comparable to methods unique to the Hawkes Learning System program if different from traditional methods or examples from the text. Mandatory quizzes and tests were assigned online using the Hawkes Learning Systems Course Management System software. With the HLS software, the students become more actively engaged in their learning experience because they are required to interact with the learning software to successfully complete assignments. In addition to completing assignments, the students can listen to and watch lectures on the topics if they are still having difficulty after class. It also provides consistency for all the MAT 099 sections offered at DSU. HLS requires students to demonstrate "mastery" learning in doing the homework. Success is based on 80% mastery, and 80% mastery is achieved by completing the homework without getting 20% of the answers incorrect. If a student answers more than 20% of the problems incorrectly, the program will force that student to start over. For tests and quizzes, the grade is immediately entered electronically into the instructor's grade book giving the student immediate credit for the assignment. At the end of a test, students can check incorrect answers and review the correct answers to the problems they solved incorrectly.

MAT 104 (College Algebra) was taught with a traditional teaching method with classroom lectures and practice problems and some in-class examples coming from the textbook. Other examples were presented in a manner comparable to methods unique to the Hawkes Learning System program if different from traditional methods or examples from the text. Mandatory homework, quizzes, and tests were assigned online using the Hawkes Learning Systems Course Management System software. With the HLS software, the students become more actively engaged in their learning experience because they

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are required to interact with the learning software to successfully complete assignments. Further discussion of MAT 104 and the results are contained under Goal #4.

Although we still use the textbook for some of the assignments in MAT 105 (College Trigonometry), our department uses MyMathLab for online homework assignments in this courses. We started using MyMathLab during the 2011 fall semester. The average from homework assignments and quiz grades has the same weight as a major test grade in the computation of the final grade. No unit tests were given using the software component.

MAT 215, Mathematics Technology, is a course designed to further mathematics students' knowledge of technology and the uses of technology. The instructor's assignments were such that the students gained proficiency in using Microsoft Office and Excel in addition to using the internet for mathematics and mathematics education-related research. The problems introduced to the students involved the construction of frequency distributions and graphs, probability simulations, pivot tables, and mathematical manipulations using the software. Assignments related to these topics were assigned to the students to complete using the available technology.

In MAT 252, Calculus II, graphing calculators were used to perform numerical integration in addition to performing tedious computations. The students were tested on these methods and concepts on one of the course assessments.

In MAT 254, Calculus IV, the students encounter problems throughout the course which are more easily understood if the graph of the three-dimensional figure is seen. The students were taught how to use DERIVE 5 to accomplish the graphing and also some other complex manipulations. To determine if the students have mastered the techniques to use this computer algebra system effectively, an activity was performed by each of the students and assessed to determine their proficiency with the software package. The scores of the students who complete this activity ranged from 69 to 92, and the average of the class was 79.

In MAT 300, Applied Probability and Statistics, lab assignments utilizing Microsoft Excel were part of the course. The focus of these labs were 1) constructing frequency distributions and drawing graphs and 2) computing standard deviation. Within the course, each lab assignment was graded and was part of the student's overall quiz average which counted as a major test grade. The lab dealing with topic 2) was a demonstration lab.

MAT 322 is a course in differential equations. Early in the semester, this class meets in our department's computer lab for a DERIVE 5 demonstration. DERIVE 5 is a computer algebra program. It processes algebraic variables, expressions, equations, and functions. It can perform numeric and symbolic computations, algebra, trigonometry, calculus, and plot graphs in 2 and 3 dimensions. Individual homework problems assigned in MAT 322 constitute 50% of the grade in the class. Due to the nature of the problems assigned in this class, the verification of answers to homework questions often entails tedious computations involving derivatives and algebraic processes. Students are required to verify answers to homework problems before submitting them for grading. For students who fail to verify answers and who consequently get incorrect answers, papers are returned to the student with no credit awarded. The student then gets the opportunity to resubmit a corrected version of the problem for a maximum of 80% credit. The software is also used to create graphs for solution functions in this course.

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In MAT 415, Discrete Mathematics, some complex computations come into play in the course. The use of a computer algebra system such as DERIVE 5 aids in performing the computations while allowing the students to focus on the main concept which is how the solution is obtained and where the solution is located. The students had an activity in which they solved some difficult problems through the use of generating functions with the program DERIVE 5 performing the computations.

Teacher interns (formerly known as student teachers) in CUR 498 create and submit their portfolios using technology. The portfolios are evaluated using the Teacher Intern Assessment Instrument—possible scores range from 3 (target) to 0 (unacceptable).

Actual Results of Evaluation

Students' grades in MAT 099 are shown for the past seven academic years. After showing some improvement in the passing rates, there was again an improvement in the fall semester of the current academic year. Improvement in the passing rate did not continue in the spring semester. It should be noted that the spring enrollment in this class was unusually low (31 students) when compared with the enrollment in previous spring semesters. This could attribute to the lower passing rate even though the students tend to get more individualized assistance from the instructors.

MAT 099	Pass	Fail		Pass	Fail
Fall 2006	63.08%	36.92%	Spring 2007	45.95%	54.05%
Fall 2007	49.66%	50.34%	Spring 2008	33.85%	66.15%
Fall 2008	51.85%	48.15%	Spring 2009	42.55%	57.45%
Fall 2009	38.98%	61.02%	Spring 2010	48.94%	51.06%
Fall 2010	36.61%	63.39%	Spring 2011	67.92%	32.08%
Fall 2011	47.22%	52.78%	Spring 2012	51.72%	48.28%
Fall 2012	57.58%	42.42%	Spring 2013	41.94%	58.06%

The use of the online system, MyMathLab, in MAT 105 (College Trigonometry) began in the fall semester of 2011. This system was used for the delivery of homework assignments to the students. After comparing grades in this course before the implementation of the software component with the grades in the 2012 – 2013 academic year, there is evidence that grades have improved. The failure rate in the 2010 – 2011 academic year was 31.5%. The failure rate in the 2012 – 2013 academic year was 24.3%. More data will be gathered in the next year for comparison purposes.

In MAT 215, Mathematics Technology, the students learned about the various programs which can be used in teaching mathematics to students through using these technologies in problem solving. The grades on the assignments indicate that the students mastered the use of the software packages for use in this way. All students earned a course grade of A.

In MAT 252, Calculus II, the students performed numerical integration on one of the course tests. The results indicated that the students made fewer calculation errors in the use of the numerical methods.

All students in MAT 254, Calculus IV, completed the technology-dependent activity. The scores on this activity ranged from 69 – 92, and the average of the class was 79. This indicates that the students were proficient with most aspects of the software package and could use it to assist them in achieving a better understanding of the problems which they were assigned in class.

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In MAT 300, Applied Probability and Statistics, the two concepts defined above were assessed individually. In the fall semester, the class average on assignment 1) was 7.2 out of 10, and in the spring semester, the class average on assignment 1) was 6.6 out of 10 on the first concept; assignment 2) was not assessed.

For MAT 322, Differential Equations, even though DERIVE 5 has the capability of solving differential equations, students are not allowed to use the software for this purpose. The students are required to show every detail of the work involved in solving the differential equations. They use DERIVE 5 to verify their answers to homework problems. They must also indicate on each problem exactly how the answer was verified. Those who decide to verify answers by hand typically have calculation errors in their work and therefore do not earn as much credit as they would have earned if they had used technology to verify the answer. When the technology is used and an answer cannot be verified, this is an indication to the student that there are errors in the problem solution. At this point, students are forced to analyze their work and employ critical thinking and problem solving skills to find the errors and correct them. The grades in the class for the spring 2012 semester indicate that the students were successful in using technology in the class. All of the students enrolled in the course received grades of A or B. The results can be used to conclude that the use of DERIVE 5 was effective.

The technology-dependent activity in MAT 415 was graded, and the range of grades was 56 – 78 with a class average of 65 for those students who completed the assignment. Because the students had difficulty with setting up the problems with pencil and paper prior to entering formulas into the software to be solved, the grades on this activity were low. Once the students had a formula, whether right or wrong, they were able to use the technology correctly. This indicated that the students had an above average grasp of the technology being used even though the solutions were incorrect for the assigned problems.

In CUR 498, no student received a rating below a 1 with most ratings being 2 or 3. They demonstrated that they can present and organize information with technology, select appropriate technology for the 7-12 classroom, and conduct lessons that use technology.

Use of Evaluation Results

Because this course is of concern statewide, MAT 099 will continue to be monitored closely. More emphasis on the students completing their homework assignments and actually using the tutorial portions of the Hawkes Learning Systems software will continue. Evidence shows that students who completed at least 60% of the homework achieved a degree of success in the class.

In MAT 105, College Trigonometry, the initial results indicate improvement in grades after the implementation of the online system, MyMathLab. Because of this, the system will continue to be employed in the next academic year in this course as the faculty continue to find ways to improve student learning in the course.

In MAT 215, Mathematics Technology, the students gained knowledge of various software programs needed to complete the various assignments, and further, the students demonstrated a mastery of this software as it related to the problems being solved.

In MAT 252, the grades on the course assessment indicate that the students are learning both how to use the technology and the basic concepts behind the methods. Implementation of the technology, whether with a handheld device or with some other computing technology will continue to be integrated in the

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course as a means for assisting the students in mastering some of the course concepts.

The students in MAT 254, Calculus IV, benefitted from knowing how to use the computer software, Derive 5, to graph surfaces and curves in three dimensions. Because it helped them to “see” what they were working with, the students had more confidence in performing the problem-solving techniques which involved these different types of structures. Derive 5 will continue to be used in this class to assist the students in understanding the types of things with which they are working.

For MAT 300, the above averages are considered as well as the comments from student evaluations to determine whether adjustments need to be made in the teaching/grading of the lab assignments. Because the class has been rescheduled from Monday/Wednesday/Friday to Tuesday/Thursday, fewer lab assignments can be completed.

The students in differential equations, MAT 322, in previous semesters have indicated on their course evaluations the value of using the computer software to assist in the problem solving. The use of the software will continue in this class, and the students will be encouraged to apply the techniques in other classes.

The students in MAT 415 benefited from the use of the computer algebra system in solving problems. They understood better after the assignment the importance of correctly setting up problems; the computer took care of the complex computations involved. Similar activities will be incorporated in this class the next time that the class is taught.

The electronic preparation of the portfolio will continue while student teaching (CUR 498). The approval process for the portfolios for all interns was facilitated by the use of e-mail attachments. Also, during the preparation process, the interns receive feedback in a timely manner. Finally, the portfolios are submitted electronically to a website for use during the next NCATE process. Incorporating technology in the lessons taught will continue to be an important factor in the planning process for lessons as well.

Related Items

 **SP1.Ind07: Resources: access to appropriate library and learning resources**

 **GE 04: Inquiry and Technology**

MAT 2013_03: High School Mathematics Tournament

Start: 7/1/2012

End: 6/30/2013

Unit Goal

Host an annual mathematics tournament to be held each spring on our campus and sponsored by the Department of Mathematics.

Evaluation Procedures

This year, seventeen schools participated in the tournament with a total of 124 students involved in the activities. Leland High School, Potts Camp High School, Warren Central High School, and Amanda Elzy High School were represented for the first time.

Actual Results of Evaluation

Sixty-five high schools were invited to participate in the mathematics tournament this year. In addition to the students from Leland High School, Potts Camp High School, Warren Central High School, and Amanda Elzy High School, many of the students involved with the tournament activities were on campus for the first time.

Use of Evaluation Results

Area high schools will be encouraged to participate this next year. The office of Communications and Marketing was asked to send press releases and photographs to area newspapers for the schools which were in attendance and also to publicize the winners of various categories in the tournament. This practice will continue to be done in the future as it gives positive publicity to Delta State and the tournament.

Related Items

 **SP2.Ind01: Enrollment**

MAT 2013_04: College Algebra

Start: 7/1/2012

End: 6/30/2013

Unit Goal

Revise the MAT 104, College Algebra, course to include a technology component.

Evaluation Procedures

During the 2012 – 2013 academic year, the college algebra instructors continued to use the computer package provided by Hawkes Learning Systems for student homework, online quizzes, and online testing. The classes, originally modeled after the emporium model prescribed by the National Center for Academic Transformation, were modified to include more lecture time. Mandatory homework assignments were required for each section of the textbook which was covered. The instructors selected the homework exercises, and the students completed these assigned problems on the computer. The student responses were graded by the computer system which provided immediate feedback to the students after each problem by indicating that the problem was solved correctly or allowing the student to see a step-by-step solution to the problem or see a detailed solution to the problem with annotated comments if the problem was solved incorrectly. All quizzes and tests were taken in the computer

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lab. The software system assessed the answers and posted grades immediately to the instructors' grade books.

Practice tests were made available to the students before each unit test, and the students were encouraged to take the practice tests as many times as possible in order to improve their chance of passing the scheduled test. In some sections, the students were required to take the practice test and achieve a score in a predetermined range before taking a unit test. Complete data is not available for this intervention, but preliminary results indicate that students did better on the actual tests after they had taken the practice test and were required to achieve a minimum score.

Actual Results of Evaluation

The data in the table below show the pass/fail rates for students on the Delta State campus in MAT 104 for the past nine academic years.

	Pass	Fail		Pass	Fail
Fall 2004	54.98%	45.02%	Spring 2005	31.79%	68.21%
Fall 2005	51.03%	48.97%	Spring 2006	52.57%	47.43%
Fall 2006	49.80%	50.20%	Spring 2007	39.02%	60.98%
Fall 2007	47.27%	52.73%	Spring 2008	27.98%	72.02%
Fall 2008	39.36%	60.64%	Spring 2009	32.84%	67.16%
Fall 2009	36.64%	63.36%	Spring 2010	34.13%	65.87%
Fall 2010	38.25%	61.75%	Spring 2011	33.58%	66.42%
Fall 2011	40.00%	60.00%	Spring 2012	35.22%	64.78%
Fall 2012	48.34%	51.66%	Spring 2013	31.48%	68.52%

Use of Evaluation Results

The data above clearly indicate a disturbing trend over the past nine years. The passing rate in the fall semesters for the six years represented by the data for 2004 to 2009 continued to decline in spite of the implementation of the computer component and the emporium model for delivery of the course content. The passing rate was increased slightly in the fall semester 2010 for the first time in the reporting period, and the rate was again increased in the fall semester 2011 and in the fall semester 2012. The higher failure rate is attributed in part to the loss of partial credit on quizzes and tests. The instructors also feel that the students are not as prepared for the level of competence required for success in the course with the newer delivery methods. The failure rate in the spring semesters has begun to decrease since the Spring semester of 2008 although it did increase slightly in the Spring 2011 and again in the Spring 2013 semesters, and it is believed that this is in part due to the fact that a number of the students who were unsuccessful in the fall semester have passed on a subsequent attempt in the spring semester. Also, students who have successfully completed MAT 099 (Intermediate Algebra) in the fall semester have been introduced to the same software in that course and are more comfortable with that type of learning environment as a result. The department is concerned about the disturbing trend in the data and is continuing to look for ways to make course revisions to assist the students in being successful in completing this course. The use of cooperative study groups was implemented in some sections of the course during the year, and this avenue of assisting in student learning will be explored more next year.

Related Items

  **SP1.Ind08: Curriculum Development and Revision**

  **GE 01: Critical and Creative Thinking**



MAT 2013_05: Recruitment and Retention

Start: 7/1/2012

End: 6/30/2013

Unit Goal

Recruit students to the university and to the mathematics programs and retain students in our programs.

Evaluation Procedures

Departmental faculty will recruit by attending college fairs and other events, engage our students in their educational endeavors through advising and classroom activities, and encourage students to take full advantage of educational opportunities.

Actual Results of Evaluation

We expect to see an increased number of students enrolling in major courses and staying at DSU to complete the programs.

Use of Evaluation Results

We will monitor recruitment and retention efforts to determine the effectiveness of these practices.

Related Items

  **SP2.Ind01: Enrollment**

  **SP2.Ind02: Retention**

Section IV.a

Brief Description

Narrative

The purposes of the Department of Mathematics are to prepare teachers of mathematics for the elementary and secondary schools, to provide a foundation for professional careers in mathematics, and to provide for the mathematical needs of the general student.

The Department offers a major in mathematics in the B.S. degree and a major in mathematics education in the B.S. in Education degree. The Department also offers a program of pre-engineering designed for the student who wishes to complete a portion of an engineering curriculum before attending an engineering school.

The Department has no active degree granting graduate program, however, graduate hours are offered through institutes and special courses.

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Section IV.b

Comparative data

Enrollment, CHP, majors, graduation rates, expenditures, trends, etc.

Narrative

	S05	F05	Sp 06	S06	F06	Sp07	S 07	F 07	Sp 08	S 08	F 08	Sp 09	S 09	F 09
Total credit hours, undergraduate	240	2357	1797	183	2538	1979	159	2248	1776	81	2226	1348	96	2032
Total credit hours, graduate	114	0	0	102	0	0	72	0	0	78	0	0	72	0
Totals	354	2357	1797	285	2538	1979	231	2248	1776	159	2226	1348	168	2032
Number of Majors														
Mathematics	3	19	18	4	23	20	3	22	19	3	18	17	6	25
Mathematics Education	7	33	25	3	24	21	2	20	18	2	17	14	3	27
Total	10	52	43	7	47	41	5	42	37	5	35	31	9	52
Grade distribution														
A	24	99	61	17	106	105	16	95	56	6	91	64	8	55
B	15	138	122	12	124	116	12	123	84	10	107	76	7	104
C	22	166	132	18	177	133	6	162	120	3	123	91	9	120
D	11	88	84	4	104	97	9	101	70	4	90	55	6	62
F	19	203	168	12	233	189	13	213	201	6	167	124	5	168
W	4	63	29	6	53	36	6	41	20	3	35	37	5	56
Other (I, IP, AU)	1	2	3	4	4	3	0	2	1	0	29	2	0	1

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	Sp 10	S 10	F 10	Sp 11	S11	F 11	Sp 12	S 12	F 12	Sp 13
Total credit hours, undergraduate	1395	102	1814	1442	114	1728	1506	87	1587	1315
Total credit hours, graduate	0	66	0	0	78	0	0	0	0	0
Totals	1395	168	1814	1442	192	1728	1506	87	1587	1315
Number of Majors										
Mathematics	17	0	24	20	3	15	19	5	22	18
Mathematics Education	20	5	23	18	5	20	14	2	12	5
Total	37	5	47	38	8	35	33	7	34	23
Grade distribution										
A	70	10	74	63	10	62	98	0	67	68
B	78	6	96	114	5	90	102	3	102	99
C	112	6	106	95	10	126	102	6	121	95
D	78	5	71	53	2	58	51	1	55	54
F	116	4	114	92	8	163	107	4	103	104
W	59	0	1	0	0	0	0	0	0	0
Other (I, IP, AU)	7	0	4	3	0	3	4	0	2	3

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There are two courses that are taught in the mathematics department that do not appear on the printout of faculty load or credit hour production—MAT 099 and CUR 487. The following table indicates the enrollment in those courses.

Enrollment	F 05	Sp 06	F 06	Sp 07	F 07	Sp 08	F 08	Sp 09	F 09	Sp 10	F 10	Sp 11	F 11	Sp 12	F 12	Sp 13
MAT 099	110	26	130	37	143	65	109	56	117	47	112	53	72	37	98	28
CUR 487	6	0	4	0	9	0	3	0	4	0	7	0	3	0	0	0

Students who are required to take MAT 099 must pass the course in their freshman year. Those students who are unsuccessful in the course in the fall semester or who were not able to register for the class in the fall must be enrolled in the course in the spring.

Number of Graduates

	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013
BS degree	1	4	2	2	4	4	1	4
BSE degree	5	4	5	6	3	3	3	3

There were four students who completed the BS degree. One student was accepted to graduate school in mathematics at Mississippi State University. One student was employed by Delta Airlines for the spring semester 2013 and has been accepted into graduate school at the University of Mississippi in the Master of Education program (mathematics education). One student went into the business sector and worked at a credit union and also in a retail store. The fourth student who completed the BS degree was accepted into the MAT program at Delta State University and plans to teach in Greenville, Mississippi, in the fall semester.

The three students who received the BSE degree graduated in December 2012. They were immediately employed for the Spring 2013 semester as teachers in Bolivar, Coahoma, and Leflore counties.

Advisees per Faculty Member*

	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013
Hebert	1	1	3	4	?	6	9	6
Horton					11	9		
Norris	9	16	11	8	14	16	10	5
Strahan	14	12	15	7				
Virden			2	6	8	6	9	6
Wear	12	12						
Wingard	16	14	12	15	15	15	17	17

*The numbers reflect students majoring in mathematics and those students with an undecided major assigned advisors in this department

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Writing Proficiency Exam

	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013
Credit	6	0	1	3	3	1	1	2
No credit	1	3	2	0	4	2	1	0

Praxis

	2005 - 2006		2006 - 2007		2007 - 2008		2008 - 2009		2009 - 2010		2010 - 2011		2011 - 2012		2012 - 2013	
PPST	Pass	Fail														
Math	2		2				2		5	0	1	0	3	0		
Reading	2			1			2		4	2	2	0	2	0	2	0
Writing	1	1	2		3		2		2		4	2	1	2	2	1
PLT	1		2	1	6		2		3		3	1	3	1	0	1
Math content area test	4	2	3		6	4	3		4		3	1	5	2	1	1

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Section IV.e

Grants, Contracts, Partnerships, Other Accomplishments

Judgment

Meets Standards Does Not Meet Standards Not Applicable

Narrative

The Department of Mathematics partnered with the College of Education to secure an NSF-funded mathematics/science partnership grant for the training of mathematics teachers of the middle grades in the Delta region. Campus workshops began in June 2013 for two 20-member cohorts.

Section IV.g

Strategic Plan Data

Only use this section if you have strategic plan info to report that is not covered in other areas of your report

Narrative

Indicators	Baseline FY 2009 (08-09)	FY 2010 (09-10)	FY 2011 (10-11)	FY 2012 (11-12)	FY 2013 (12-13)	FY 2014 (13-14)
3.11 Number of professional development activities by FT faculty	5	8	9	4	7	
3.12 Number of scholarly contributions by FT faculty	5	8	9	6	5	
3.13 Number of service activities by FT faculty	11	5	9	17	26	

Section IV.h

Committees Reporting To Unit

Each unit includes in the annual plan and report a list of the committees whose work impacts that unit or any other aspect of the university; along with the list will be a notation documenting the repository location of the committee files and records. Committee actions affecting the unit’s goals may be noted in other applicable sections of the annual reports. Not required to be included in the unit’s annual plan and report, but required to be maintained in the repository location, will be a committee file that includes, for each committee: Mission and by-laws, Membership, Process, Minutes.

Narrative

The Curriculum Committee of the Department of Mathematics files are housed in Walters 270I (now Broom 280).

The Tenure and Promotion Committee of the Department Mathematics files are housed in Walters 270A (now Broom 281).

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Section V.a

Faculty (Accomplishments)

Noteworthy activities and accomplishments

Narrative

Dr. David Hebert presented “Geometric Transformations and the Common Core” at the annual meeting of the Mississippi Council of Teachers of Mathematics in Starkville, Mississippi, September 2012.

Dr. Hebert was named to a state committee to help Mississippi implement the PARCC assessments called for under Common Core State Standards.

Dr. Hebert was elected to the Friends of Dahomey Board of Directors as Vice President.

Dr. Paula Norris presented “What’s the Point?” at the annual meeting of the Mississippi Council of Teachers of Mathematics in Starkville, Mississippi, September 2012.

Dr. Norris was cospeaker at the fall commencement at Delta State University.

Dr. Lee Virden presented “When a Quilt is Not Just a Quilt” at the annual meeting of the Mississippi Council of Teachers of Mathematics in Starkville, Mississippi, September 2012.

Dr. Virden serves as president of the Delta State University chapter of Phi Kappa Phi Honor Society.

Dr. Clifton Wingard presented “This Is Radical!” at the annual meeting of the Mississippi Council of Teachers of Mathematics in Starkville, Mississippi, September 2012.

Dr. Wingard served on the Locations and Nominations Committee for the Louisiana/Mississippi Section of the Mathematical Association of America.

Dr. Wingard served as an external reviewer for tenure and promotion candidates at two different institutions in Louisiana.

Dr. Wingard served on the Teacher Education Council and the Assessment Committee for the College of Education.

Dr. Wingard served as a report reviewer for NCTM/NCATE in the fall and spring semester.

Dr. Wingard served on the Teacher Education Council and the Assessment Committee for the College of Education.

Dr. Wingard served as a report reviewer for NCTM/NCATE in the fall and spring semester.

Section V.d

Position(s) requested/replaced with justification

Narrative

No new positions requested. Dr. George Butler was hired as a visited professor of mathematics after a search in the summer of 2011 was unsuccessful to fill the faculty position (concentrating on secondary education) vacated by Dr. Leslie Horton upon her retirement. A subsequent search in the spring semester of 2012 again yielded no permanent faculty member, and Dr. George Butler agreed to continue to teach at Delta State University for the 2012 – 2013 academic year. The search for a permanent, tenure-track faculty member began in the fall semester 2012. Early in the spring 2013 semester, a suitable candidate was identified and brought to campus for an interview. Dr. Liza Cope will begin as a tenure-track faculty member in the fall semester 2013.

Credit Hour Production							
	Summer		Fall		Spring		Total
	UG	GR	UG	GR	UG	GR	
Math							
AY 2013	87	0	1,587	0	1,315	0	2,989
AY 2012	114	78	1,728	0	1,506	0	3,426
AY 2011	102	66	1,814	0	1,442	0	3,424
AY 2010	96	72	2,032	0	1,395	0	3,595
AY 2009	81	78	2,226	0	1,348	0	3,733
AY Totals							
AY 2013	87	0	1,587	0	1,315	0	2,989
AY 2012	114	78	1,728	0	1,506	0	3,426
AY 2011	102	66	1,814	0	1,442	0	3,424
AY 2010	96	72	2,032	0	1,395	0	3,595
AY 2009	81	78	2,226	0	1,348	0	3,733

Enrollment by Major						
	Summer		Fall		Spring	
	UG	GR	UG	GR	UG	GR
Math						
AY 2013	5	0	22	0	18	0
AY 2012	3	0	15	0	19	0
AY 2011	0	0	24	0	20	0
AY 2010	6	0	25	0	17	0
AY 2009	3	0	18	0	17	0
Math Education						
AY 2013	2	0	12	0	5	0
AY 2012	5	0	20	0	14	0
AY 2011	5	0	23	0	18	0
AY 2010	3	0	27	0	20	0
AY 2009	2	0	17	0	14	0
AY Totals						
AY 2013	7	0	34	0	23	0
AY 2012	8	0	35	0	33	0
AY 2011	5	0	47	0	38	0
AY 2010	9	0	52	0	37	0
AY 2009	5	0	35	0	31	0

Graduates			
	Math	Math Ed	Total
	BS	BSE	
AY 2013	4	3	7
AY 2012	1	3	4
AY 2011	4	3	7
AY 2010	4	3	7
AY 2009	2	6	8

APPENDIX

Objectives for Quantitative Reasoning (MAT 103):

1. Define key terms related to sets, Venn diagrams, algebraic models, probability, statistics and finance. (GE 1, 3)
2. Use Venn diagrams to solve problems related to surveys and probabilities. (GE 1, 3)
3. Use counting techniques as methods of problem solving. (GE 1, 3)
4. Calculate and interpret probabilities, including probabilities from frequency tables, graphs, and probability distributions. (GE 1, 3)
5. Compute and interpret statistics pertaining to data sets. (GE 1, 3)
6. Gather, organize, describe, and analyze data to make and support decisions. (GE 1, 3)
7. Communicate results using the language of probability and statistics. (GE 2)
8. Solve personal finance problems related to savings and interest, taxes, discounts, credit, and other purchases, such as homes and automobiles. (GE 1, 3)
9. Apply a variety of problem-solving techniques to real-world problems. (GE 1, 3)

Objectives for College Algebra (MAT 104):

1. Simplify algebraic expressions.
2. Solve linear equations.
3. Solve quadratic equations.
4. Solve inequalities.
5. Solve applied problems.
6. Describe and define a function.
7. Find the equation for a linear function satisfying given conditions.
8. Identify the domain and range.
9. Find the intercepts of an equation or graph.
10. Sketch the graph of a function.
11. Verify that a function has an inverse and compute the inverse of a function.
12. Simplify exponential and logarithmic expressions and solve equations.
13. Solve systems of equations.

Rubric for Scoring Student Learning Outcome 3:

- 5 demonstrates knowledge of all main ideas; ideas are carefully explained, applied, extended, and appropriate connections made
- 4 demonstrates knowledge of most of main ideas
- 3 demonstrates knowledge of some main ideas
- 2 demonstrates little knowledge of main ideas, disconnected ideas, or idea does not apply to article
- 1 demonstrates no understanding of main ideas
- 0 no response or paper poorly written and demonstrates no understanding of main ideas

Note: Mistakes in grammar and spelling will be applied to each level.