ANNUAL REPORT OF EFFECTIVENESS

Academic Year 2001-2002
Summer 2001, Fall 2001, Spring 2002

DEPARTMENT OF MATHEMATICS

COLLEGE OF ARTS AND SCIENCES

DELTA STATE UNIVERSITY
Annual Report of Effectiveness
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Mathematics Department

Departmental Goals

Goal 1:
A. Publish a departmental newsletter.
B. Method of assessment—a newsletter was published in the spring of 2001 and mailed to 400 alumni. The 2002 newsletter is currently being printed.
C. Result of assessment—positive comments from alumni and a request to continue that avenue of communication.
D. Improvements made as a result of assessment—more information about departmental faculty members, departmental activities, and recent graduates.

Goal 2:
A. 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.
B. Method of assessment—NCATE Standards for the teacher education program.
C. Result of assessment—need for a technology course that focuses on use of technology in mathematics.
D. Improvements made as a result of assessment—a new course, MAT 215 Mathematics Technology, has been added to the curriculum. Although this is a required course for mathematics education majors, it is appropriate for all mathematics majors as mathematics content that is suitable for the secondary mathematics classroom is the vehicle used to illustrate and demonstrate a wide variety of technology and relevant multimedia. The technology includes, but is not limited to, scientific and graphing calculators, computers, computer accessories (appropriate software, scanners, projection devices, digital cameras), interactive television, distance learning, teleconferencing, and electronic information resources.

In mathematics content courses, teaching with technology is modeled: graphing calculators in algebra, trigonometry, pre-calculus, the first two calculus courses; computers and computer software in probability and statistics, the third calculus course, and history of mathematics. The students are expected to solve mathematics application problems with the aid of the appropriate technology.

Goal 3:
A: Strengthen the B.S.E. degree requirements to comply with the recommendations on the preparation of secondary teachers from NCTM and NCATE.
B. Method of assessment — NCATE Standards
C. Result of assessment — our program did not meet all of the standards as there were some course options (modern algebra or linear algebra, history of mathematics or number theory) and no required discrete mathematics course in our program. NCTM Standards require modern algebra, linear algebra, history of mathematics, and discrete mathematics. The options in our program were not considered sufficient.
D. Improvements made as a result of assessment — the options were eliminated and three required courses were added: MAT 215 Mathematics Technology, MAT 415 Discrete Mathematics, MAT 405 History of Mathematics. Linear algebra (MAT 442) and modern algebra (425) will continue to be offered in alternating fall semesters with an added requirement of a seminar and portfolio. MAT 442/MAT 425 will be linear algebra with a seminar in modern algebra. MAT 425/MAT 442 will be modern algebra with a seminar in linear algebra.

As a result of these improvements, our program is fully accredited by NCTM and NCATE.

Goal 4:
A. Host an annual Mathematics Tournament to be held each spring on our campus and sponsored by the Mathematics Department.
B. Method of assessment — was the tournament held?
C. Result of Assessment — The Mathematics Department hosted the Second Annual Mathematics Tournament for high school students in February. The effort was very successful with 11 schools participating.
D. Improvements made as a result of assessment — Early communication with the schools to get the date on their calendar. Plans have already begun to make next year's tournament bigger and better with more area schools participating. This has become a recruiting activity for the department.

The Mathematics Department offers a major in mathematics in the B.S. degree and a major in mathematics education in the B.S. in Education degree.

Student Outcomes for B.S. Degree

A. Outcome 1 — Students will acquire a broad knowledge of the fundamental principles of mathematics enabling them to make connections between concepts and demonstrate analytical skills.
B. Method of assessment — successful completion of MAT 490, a capstone course.
C. Results of assessment — all grades in MAT 490 were A
D. Improvements made as a result of assessment — course requirements are revised each year based on weaknesses of the students involved.

A. Outcome 2 — Students who enroll in graduate school will be adequately prepared for graduate study.
B. Method of assessment—success of graduates
C. Result of assessment—One graduate successfully completed the requirements for the MS degree in mathematics at the University of Mississippi and plans to enroll in the doctoral program. Another graduate successfully completed his MBA degree at Mississippi State University.
D. Improvements made as a result of assessment—minor revisions in course content based on feedback from the graduates mentioned above.

A. **Outcome 3** Employers will express general satisfaction with graduates.
B. Method of assessment—questionnaire to employers.
C. Results of assessment—no response from employers.
D. Improvements made as a result of assessment—we will attempt to establish better communication with employers.

**Student Outcomes for B.S.E. Degree**

A. **Outcome 1** Students will demonstrate knowledge of mathematics adequate for teaching mathematics in grades 7-12.
B. Method of assessment—an acceptable score on the Mathematics Specialty Area Test of the Praxis.
C. Results of assessment—Two students took the test during the period summer 2001 through spring 2002. The student who took the test for the first time received a passing score. The other student was taking the test for the fourth time and did receive a passing score this time.
D. Improvements made as a result of assessment—We will encourage students to wait until they have attained a GPA in mathematics of at least 2.5 to take the test. The student who took the test 4 times had to repeat at least once almost all the mathematics courses due to low grades. We will also encourage students to review all mathematics before taking the test.

A. **Outcome 2** Students will demonstrate proficiency in instructional methods and techniques in teaching mathematics.
B. Method of assessment—Analysis of the results of the MTAI, Indicators 1-12 and STAI, Indicators 1-8.
C. Results of assessment—Successful scores on all indicators.
D. Improvements made as a result of assessment—A sign off sheet is provided for the classroom teacher to show approval for the portfolio, and the deadline for submission of the portfolio to the university supervisor is two weeks prior to teaching of the portfolio. These time frames allow time to correct deficiencies.

A. **Outcome 3** Employers will express satisfaction with our graduates.
B. Method of assessment—Employer survey questionnaire.
C. Results of assessment—The only response indicated satisfaction.
D. Improvements made as a result of assessment. We will try contacting employers via telephone in an attempt to get more responses regarding our graduates. The demand for our graduates continues, however, we have few which is currently true nationally. We are urging our alumni to assist us in recruiting students who wish to become mathematics teachers.

Writing assessment

A. Goal: To improve the writing skills of all mathematics majors.
B. Method of assessment-- To assess student outcomes the mathematics department uses the writing proficiency examination and the Praxis writing examination.
C. Results of assessment-- Only 3 of 5 students who took the writing proficiency exam during the 2001-2002 academic year passed. The only student who took the Praxis writing examination was successful.

D. Improvements made as a result of assessment-- The mathematics department has agreed 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 both upper and lower 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. An evaluation rubric will be created by the mathematics faculty and shared with the students prior to any writing assignment.

2. All classes above the 100 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.