

## Core Assessment Progress Report

Course Title & Number: **Math 1302- College Algebra**

For Calendar Year: **Fall 05- Spring 06**

Date submitted to review committee:

By: Melissa Hardeman

Overall Rating: \_\_\_\_\_

(1) Student learning goal(s) addressed this year:

### **Core Competencies addressed - Mathematics, Critical Thinking, Verbal Literacy**

**Goal 1:** Students will be able to analyze data, solve problems, demonstrate knowledge of required course topics and use a graphing calculator.

**Goal 2:** Consistency across sections will be maintained from year to year.

**Goal 3:** Students will achieve critical thinking and verbal literacy skills.

(2) Learning outcomes/objectives for those goals addressed this year:

### **Goal 1 Objectives**

We expect at least 65% of the students to demonstrate mastery in each area showing gradual improvement over semesters.

1. Function notation
  - (a) graphing
  - (b) non-graphing
2. Polynomial Functions
3. Rational Functions
4. Exponential and Logarithmic Functions
5. Matrices
6. Sequences and Series
7. Calculator Usage

### **Goal 2 Objectives**

The standard deviations of the student success rates\* for all sections will not exceed 22. For the department, the overall student success rate\* will be at least 70%.

\*The student success rate is defined to be the percentage of students who make a C or better in the course AND also score at least 65% on the common final exam.

### **Goal 3 Objectives**

All students will solve problems by doing mathematical computations necessary to reach a conclusion and stating the logical conclusion with a success rate of at least 65%.

i.e. At least 65% of the students will display skills in both critical thinking and verbal literacy.

(3) Activities where assessed:

**Curriculum Assessment Map for Course Assessment:**

<b>Goals</b>	<b>Objectives/Outcomes</b>	<b>Activity</b>	<b>Used for Assessment</b>
<b>Goal 1</b> Analyze data, solve problems, demonstrate knowledge of required course topics and use a graphing calculator	Demonstrate mastery in each area	Common final examination	Yes
<b>Goal 2</b> Consistency across sections will be maintained	The standard deviations of the student success rates* for all sections will not exceed 22. For the department, the overall student success rate* will be at least 70%.	All teachers will submit to the Core Assessment Coordinator an analysis of their student's final exam scores and grades.	Yes
<b>Goal 3</b> Critical thinking and verbal literacy skills	Solve problems by doing mathematical computations necessary to reach a conclusion and stating the logical conclusion	Students will solve at least one in class Classroom Assessment Technique problem designed to measure both verbal literacy and critical thinking skills.	Yes

(4) Methods used:

### Goal 1 Objectives

We expect at least 65% of the students to demonstrate mastery in each area showing gradual improvement over semesters.

1. Function notation
  - (c) graphing
  - (d) non-graphing
2. Polynomial Functions
3. Rational Functions
4. Exponential and Logarithmic Functions
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6. Sequences and Series
7. Calculator Usage

(a) Method

A Common final examination is given every semester to all students from 4-6 p.m. on Consultation Day. A committee of teachers from the department meets, designs and constructs the exam. The above methods ensure reliability and validity of the data. The data collected from this exam includes final exam average and student performance on the skills listed above. Data for this objective is collected in the Spring semesters only.

(b) Design

All students will take the final exam on the same day at the same time. The final exam is designed and constructed by a committee of teachers from the department. The results are analyzed by the Core Assessment Coordinator for the department.

(c) Assessment cycle

All goals and objectives are measured and analyzed each year. Results are presented to the faculty so decisions regarding any revisions or changes to the plan can be made departmentally.

(d) Stakeholder involvement

The content in this course is mandated by the state which leaves little flexibility in making changes. College Algebra is designed to be a Pre Calculus course for students who will be taking Trig or Business Calculus but many students take this course as their core math requirement. We consider the stakeholders for this course to be all departments where this course fulfills the core math requirement such as Mathematics, Computer Science, Engineering Tech, Chemistry, Accounting, Business, Biology (as well as many others). Discussions have taken place with other departments regarding this course but not on a regular basis.

## Goal 2 Objectives

The standard deviations of the student success rates\* for all sections will not exceed 22. For the department, the overall student success rate\* will be at least 70%.

**\*The student success rate is defined to be the percentage of students who make a C or better in the course AND also score at least 65% on the common final exam.**

### (a) Method

All teachers will submit to the Core Assessment Coordinator an analysis of their student's final exam scores and grades at the end of every semester.

### (b) Design

Data is collected from all teachers for each section taught. The Core Assessment Coordinator analyzes the data and reports the findings to the faculty.

### (c) Assessment cycle

All goals and objectives are measured and analyzed each year. Results are presented to the faculty so decisions regarding any revisions or changes to the plan can be made departmentally.

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### Goal 3 Objectives

All students will solve problems by doing mathematical computations necessary to reach a conclusion and stating the logical conclusion with a success rate of at least 65%. i.e. At least 65% of the students will display skills in both critical thinking and verbal literacy.

(a) Method

Students in all sections will solve at least one in class Classroom Assessment Technique problem designed to measure both verbal literacy and critical thinking skills. All students solve the same problem. The data collected from each teacher includes the number of students displaying critical thinking skills and/or verbal literacy skills as well as those who displayed neither skill.

(b) Design

Data is collected from all teachers for each section taught. The Core Assessment Coordinator analyzes the data and reports the findings to the faculty.

(c) Assessment cycle

All goals and objectives are measured and analyzed each year. Results are presented to the faculty so decisions regarding any revisions or changes to the plan can be made departmentally.

(d) Stakeholder involvement

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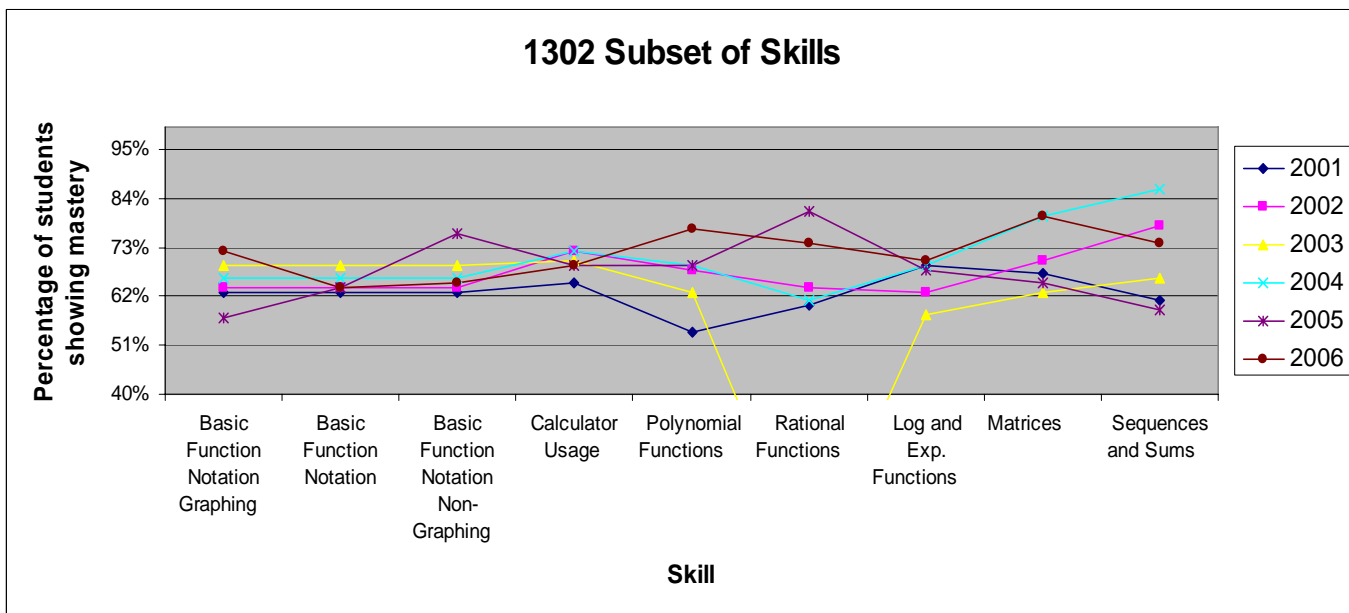
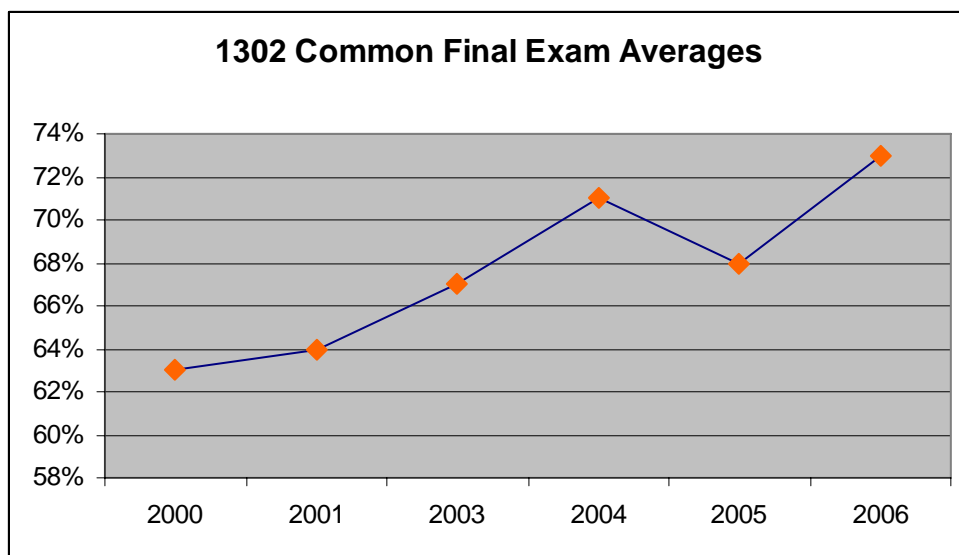
**(5) What are the assessment findings? How did you analyze them?**

**Goal 1 Objectives**

The data indicates that students are meeting the goal of demonstrating mastery at the 65% level or above in all areas on this years assessment.

The assessment coordinator will continue to work with all 1302 instructors and departmental committees by supplying instructors with supplemental handouts and informing them of assessment outcomes.

From the graph we see that the average on the common final exam is hovering around 70%. We continue to tailor the exam questions to match those found in the homework assignments.

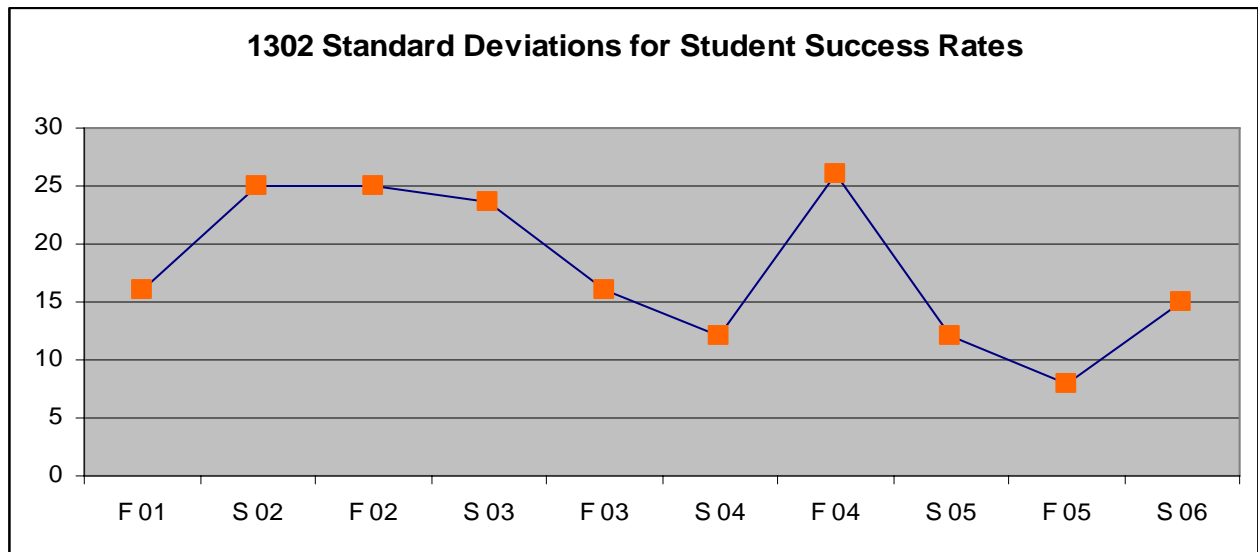
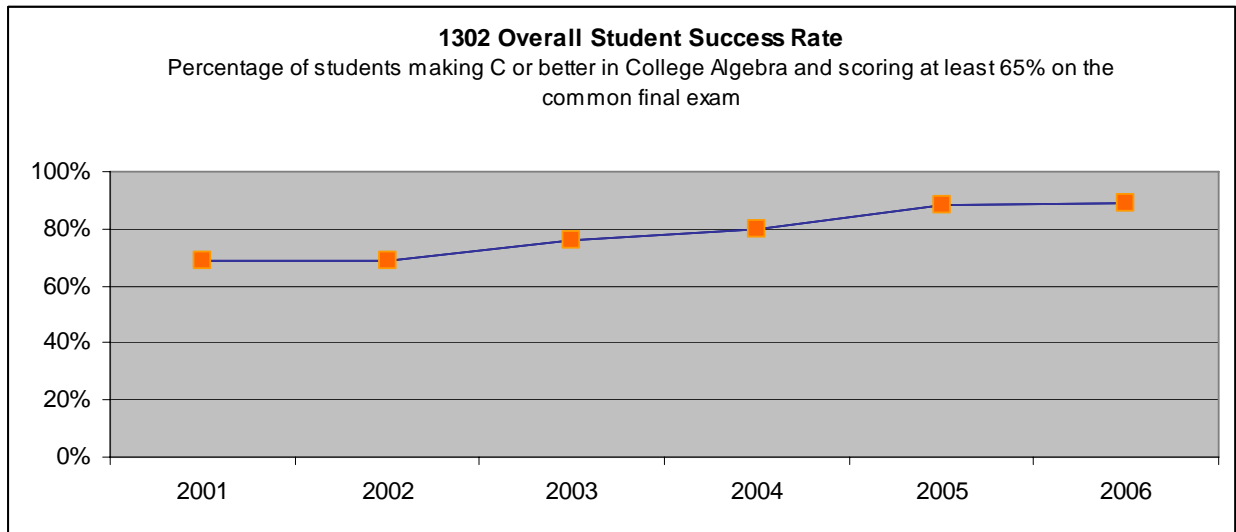


**(5) What are the assessment findings? How did you analyze them?**

**Goal 2 Objectives**

Data indicates an overall departmental success rate of 89% with a standard deviation of 12. We see a general decline in the standard deviation among courses. These results indicate successful implementation of the assessment feedback loop in the course.

We have instituted a mentoring program for our new graduate assistants and part time instructors which we feel will close any gaps in consistency.



**(5) What are the assessment findings? How did you analyze them?**

**Goal 3 Objectives**

The results on the Classroom Assessment Technique problems indicate that 50% of the students exhibited both Critical Thinking and Verbal Literacy Skills. We feel this type of problem accurately assesses Critical Thinking and Verbal Literacy skills and we will continue to design and administer these in this course. We hope to see improvements in these results in the coming semesters.

Of the 885 students that were given the quizzes:

448/885=50% exhibited both verbal literacy and critical thinking skills

754/885=85% exhibited verbal literacy or critical thinking skills

**(6) What conclusions were drawn and what decisions were made as a result? How were stakeholder groups involved?**

1. Continue to administer the common final exams on consultation day. This is the best way to determine student's knowledge of the course subject matter. The average has fluctuated over the years. Continue to develop supplemental handouts on topics where students performed poorly. Development of an online practice final exam by one of our graduate students is available for all students' use.
2. Critical Thinking and Verbal Literacy scores are not where we would like. We will continue to assess critical thinking and verbal literacy through Classroom Assessment Technique problems but do it more often during the semester.
3. Consistency across sections is better. Continue the Assessment feedback loop by informing all teachers of assessment outcomes, reviewer's comments, and materials available. Place the assessment report on the departmental web page.
4. Institute a mentoring program for teaching assistants and part time instructors which includes classroom visits and feedback.
5. Continue to properly place students in the correct courses.
6. Communicate the results with "stakeholders" by placing these on the departmental website and making an announcement, through FacFocus, where the results can be viewed.