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**ROWAN UNIVERSITY CURRICULUM PROPOSAL**

*Copy of Proposal*  
 (P)

**PROPOSAL TITLE:** College Algebra 17211

**CHECK APPROPRIATE:**  UNDERGRADUATE     GRADUATE     SEMESTER HOURS

**SPONSOR(S):**  
 Curriculum Committee / Math Department

**DEPARTMENT/TELEPHONE #** 256-4844

**CHECK ONE:**  COURSE     MINOR PROGRAM     CONCENTRATION     SPECIALIZATION  
 ACHIEVEMENT CERTIFICATE     CERTIFICATION PROGRAM     MAJOR PROGRAM

<p><b>Step #1 (Department)</b></p> <p><input checked="" type="checkbox"/> Approved (Date) <u>10/20/97</u></p> <p><input type="checkbox"/> Not Approved (Date)</p> <p><u><i>M. Alan</i></u>                  Dept. Curriculum Chr.</p> <p><u><i>M. Alan</i></u>                  Reviewed (Date)</p> <p><u><i>A. Reeves</i></u>                  Dept. Chr.</p>	<p><b>Step #2 (Receipt)</b></p> <p>SCC# <u>97-98-108</u></p> <p><u>10-24-97</u>                  Date Received Senate</p> <p><u><i>A. Reeves</i></u>                  Senate Curriculum Chr.</p>	<p><b>Step #3 (School)</b></p> <p>Reviewed Date: <u>11/1/97</u></p> <p><input checked="" type="checkbox"/> Recommend to Approved  <input type="checkbox"/> Recommend NOT to Approve</p> <p>Forward for Open Hearing:</p> <p><input checked="" type="checkbox"/> WITHOUT Reservations  <input type="checkbox"/> WITH Reservations:</p> <p>Comments:  <u><i>1910</i></u></p> <p><u><i>A. Reeves</i></u>                  School Committee Chr.</p>
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**Step #4 (Academic Dean):**  Recommended     NOT Recommended     Conditionally Recommended (See Comments)

Comments:

Dean Signature/Date \_\_\_\_\_

**Step #5 (Senate Curriculum Committee):** Open Hearing Date: 3/3/98 Approved by Curriculum Committee Date \_\_\_\_\_

Returned to Sponsor(s) for the following reason:

**Step #6 (Senate)** Date announced/voted on at Senate 3/3/98 If voted on:  Approved     NOT Approved

Date forwarded to Executive Vice President/Provost: 3/5/98

Senate Curriculum Committee chair Signature/Date: *A. Reeves* 3/31/98

Step #7 (Executive Vice President/Provost): Date Received 4/14/98

Approved

NOT Approved If no, reasons are as follows:

Student Credit Hours \_\_\_\_\_

Faculty Load Hours \_\_\_\_\_

Equalized Credit Hours \_\_\_\_\_

Official Copy & Approval Sheet Filed (Date) \_\_\_\_\_

Executive Vice President/Provost Signature

[Signature] 4/14/98

**Registrar**

Date Approved Course Description Received \_\_\_\_\_

Hegis Taxonomy and Course Number Assigned 1701-123

Date/Signature of Registrar 4-21-98

[Signature]

**Notification Forward:**

Senate Curriculum Committee Chairperson

Department Chairpersons

Academic Dean(s)

Registrar

Sponsor(s)

Transmittal 4/24/98

**Rowan University**  
**Department of Mathematics**

**Course Proposal**

**College Algebra**

**I. Details:**

- a) **Course Title:** College Algebra
- b) **Sponsors:** Curriculum Committee, Department of Mathematics
- c) **Course Level:** Freshman
- d) **Credit Hours:** 3 credit hours
- e) **Curricular Effect:** This is a general education course that is a prerequisite for Statistics I and Calculus/Techniques & Applications.
- f) **Prerequisite:** There is no prerequisite. However, students are expected to have completed Intermediate Algebra or its equivalent.
- g) **Suggested Time / Implementation:** This course will be offered every semester.
- h) **Resources:** Faculty, equipment and library resources are adequate to run this course.

**II. Rationale:**

This course is an introduction to college algebra. It is designed to prepare students who are weak in algebra and plan to take Statistics I or Calculus/Techniques & Applications. The content of the course is the same as that of the existing Precalculus course excluding the topics on trigonometric functions. Precalculus is a four credit course that is currently a prerequisite for the courses Statistics I and Calculus/Techniques & Applications. These two courses (Statistics I and Calculus/Techniques & Applications) are mainly taken by students from the Business School and do not involve topics from trigonometry. Thus, a three credit course having the same contents as Precalculus (and excluding trigonometry) is a more appropriate prerequisite for the above courses.

### **III. Essence of the Course:**

#### **a) Objectives:**

At the end of this course, students will be able to:

- (i) perform different operations involving algebraic expressions including exponential expressions,
- (ii) graph linear and quadratic functions,
- (iii) solve equations and inequalities algebraically and graphically,
- (iv) graph polynomial and rational functions,
- (v) graph algebraic, exponential and logarithmic functions,
- (vi) solve exponential and logarithmic equations,
- (vii) apply exponential and logarithmic models.

#### **b) Topical Outline:**

Topics that will be covered include:

- (i) Real numbers, absolute value, exponents and radicals, laws of exponents, polynomials and factoring, elementary analytic geometry.
- (ii) Functions and their graphs: Functions, graphs of functions, combinations of functions, inverses of functions, graphs of linear and quadratic functions.
- (iii) Solving equations and inequalities: Intercepts and zeros of functions, solving equations algebraically and graphically, solving inequalities algebraically and graphically.
- (iv) Polynomials and rational functions: Polynomial functions of higher degree, rational functions and asymptotes, graphs of polynomial and rational functions.
- (v) Exponential and logarithmic functions: Exponential functions and their graphs, logarithmic functions and their graphs, properties of logarithms, solving exponential and logarithmic equations, exponential and logarithmic models.

#### **c) Student Evaluation:**

Students will be evaluated based on class participation, assignments and tests.

**d) Course Evaluation:**

This course will be evaluated through student evaluations as well as departmental review.

**IV. Results of Consultations:**

The content and nature of this course was discussed with the Business School. This proposal has been reviewed and approved by the Curriculum Committee of the Department of Mathematics.

**V. Course Texts**

The following books may be used as a text for the course.

- (i) Larson, Hostetler and Edwards (1997), Precalculus, Houghton Mifflin Company.
- (ii) Hackworth, Robert, et. al., (1994), Focus on College Algebra, second edition, H&H Publishing Company.

## **VI. Catalogue Description:**

### **(1701-123 College Algebra)**

This course is designed to help students who are weak in algebra prepare for Statistics I or Calculus Techniques & Applications. The contents include: a brief review of intermediate algebra, the structure of the real number system, elementary analytic geometry, and algebraic, exponential and logarithmic functions (including their inverses and related functions). Graphs of functions are also studied. A graphing calculator is required. Students are expected to have completed Intermediate Algebra or its equivalent.



*Management & Management Information Systems*

TO: Abera Abay, Mathematics Department

From: Robert S. Fleming, Management & MIS Department

Date: October 23, 1997

Subject: College Algebra Course

The "College Algebra" course proposal prepared by your department was presented and discussed at our College of Business Department Chairs meeting this morning.

On behalf of the three academic departments within the College of Business, I am writing to furnish our enthusiastic support for this course. We commend your department on this quality proposal. This course should be a valuable addition to our course complement available for our students.

Should we be able to provide further support for this proposal, please feel free to contact me.

CC: Diane Hamilton  
Berhe Habte-Giorgis  
George Romeo