



APPROVAL FORM

- 1) An approval form must accompany each proposal.
- 2) A proposed catalogue description of the course must accompany the proposal as a separate page.
- 3) Results of all consultations must be attached to the proposal.

Proposal Title Pre-Calculus Mathematics

Sponsor(s) Fran Masat/David Travis Dept. Mathematics/Computer Science

Check One { Course Credit/Level/Title Change or deletion Other _____
 Concentration _____ Specialization _____ Major Program _____ Certification _____

Graduate _____ Undergraduate No. of Credits 3

Approved
 Not Approved _____
Fran Masat
 Dept. Curr. Comm. Chairperson
5-1-81
 Date

Approved
 Not Approved _____
Fran Masat
 Chairperson, Department
8-30-81
 Date

Division Curr. Comm.
 Reviewed Oct 29, 81
 Date

Approved
 Not Approved _____
Oct 29, 81
 Date

J. Polky
 Chairperson, Div. Curr. Comm.

Dean of Division
 Reviewed 11/3/81
 Date

Alan Demaree
 Signature

SENATE CURRICULUM COMMITTEE

SCC # 81-92-6 Proposal Received 10/20/81 Open Hearing Held 11/20/81

Returned to the department for the following reason(s): Clear up language o.k. S.A.

Approved by the Curriculum Committee: Date 12/2/81

Presented to ~~Executive Committee~~ of the Faculty Senate as information: Date 12/11/81

Notifications forwarded: Vice President for Academic Affairs: Date _____

Shirley G. O'Keefe
 Signature: Chairperson, Senata Curriculum Committee

VICE PRESIDENT FOR ACADEMIC AFFAIRS

Official copy and approval sheet filled 18/11/81 Date _____ Signature _____

Course approved Yes _____ No ✓ *Approved by Registrar*

If no, reasons are as follows:

- 1.
- 2.
- 3.

with approval
also note
with the spec
approval

Student credit hours assigned 3
 Faculty load hours 3
 Equalized credit hours 3

REGISTRAR

Approved course description received and Hegis Taxonomy Number assigned

by Registrar Yes _____ No _____

Hegis Taxonomy Number 1741.122

Signature: Registrar _____ Date _____

ACADEMIC DEAN

Yes Budget, faculty library allocations and Academic Support Services are adequate for immediate implementation.

No Constraints do not permit implementation. The earliest the proposal might be implemented would be _____

Signature: Academic Dean _____ Date _____

Copies forwarded: Senate Curriculum Committee Chairperson, Department Chairperson, Registrar

Title of the Course: Pre-Calculus Mathematics

Department: Mathematics and Computer Science

Sponsor: Mathematics and Computer Science Department

Initiators: David Travis and Fran Masat, for the Department

Essence: a) Undergraduate Course

b) Credits: 3.0

c) Level: Well prepared students, i.e., those who have mastered the material covered in the course Intro. to Math II, Social Science. (New title: Intermediate Algebra)

d) Prerequisite: Intermediate Algebra or equivalent preparation.

e) Effects on Curricular Pattern: The total number of courses offered in the Mathematics and Computer Science Department will be the same. The sections of the course currently offered under the title of Introduction to Mathematics II, Pre-Calculus would be replaced with the sections of the new course Pre-Calculus Mathematics. The major effect will be to allow students who must take a calculus course to enter that course with a truly adequate preparation. (See Rationale)

f) Time Frame: The first sections (four anticipated) will be available in the Spring Semester of 1982.

3. Details:

a) Adequacy of Resources: No problems of any kind. All staff are fully qualified to teach the course. No additional faculty, space, or resources will be needed now or in the future.

b) Uniqueness and characteristics of the Course: The course will not be unique, except in the sense that it will be the true preparation for Calculus that the current Intro. to Math II, Pre-Calculus always should have been, and often was not. It will now be possible for the student to take the course Intermediate Algebra (formerly, Math II, Soc. Sci.) in order to gain the purely algebraic skills necessary to deal with a course in elementary functions. The proposed course, which emphasises these functions, is realistic preparation for The Calculus.

c) Objectives of the course: At the conclusion of the course the student will be able to:

. Manipulate and evaluate algebraic, exponential, logarithmic, and trigonometric functions.

. Graph linear and quadratic functions, including those describing the conic sections, in both rectangular and polar coordinates.

. Graph algebraic, exponential, logarithmic, and trigonometric functions.

. Solve systems of linear equations.

. Solve systems of linear inequalities.

d) Evaluation and grading procedures: Standard lecture, demonstration, and examination.

4. Topical Outline:

a) (One and one half to two weeks) A brief review of algebraic manipulation and the structure of the real number system.

b) (Three weeks) Solutions of inequalities and systems of inequalities.

c) (Four weeks) Analytic Geometry: Lines, conic sections, polar coordinates.

d) (Seven weeks) Properties and graphs of the Exponential, Logarithmic, and Trigonometric Functions.

5. Rationale:

Originally, there was only one course -- titled Introduction to Mathematics II -- which covered both intermediate algebra and trigonometry. It provided both the mathematics competency requirement for the Liberal Arts Division and served as a preparation for the Calculus.

In an effort to separate the two functions, the current "track system" was implemented. The separation of functions was accomplished satisfactorily, but other problems have arisen. The major problem has been that the two tracks (pre-calculus and social science) could not be taught at the same level. The pre-calculus track required a higher level of preparation. The new course will be more sophisticated and will require a level of preparation equivalent to the current Math II algebra track. This should eliminate the problem which arose when students attempted

to enter Math II, Pre-Calculus with a preparation of Math I (Introductory Algebra). Moreover, it will also alleviate the problem of the present large gap between the present version of Math II, Pre-calculus and the course Calculus I.

6. Consultations:

See attached letters.

7. Possible Texts:

1. Flanders and Price, Precalculus Mathematics, 2nd. ed. Saunders College Publishing, Phila. 1981 (Chapters 1 through 7)
2. Gilligan and Nenko, College Algebra and Trigonometry. Goodyear, California, 1981 (Chapters 1 through 7)
3. Swokowski, Fundamentals of Algebra and Trigonometry, 5th Edition, Prindle, Wiber, and Schmidt, Boston. 1981 (Chapters 1 through 7)
4. Horner, Precalculus: Elementary Functions and Relations. Holt, Rinehart and Winston, N.Y. 1969 (Chapters 1 through 6)

8. Catalog Description:

1701.122^{*}

Pre-Calculus Mathematics.

(Prerequisite: 1701.121 or equivalent preparation: e.g. high school algebra II.)

The course prepares students for the course Calculus I. The contents include: a brief review of intermediate algebra; the structure of the real number system; elementary analytic geometry; algebraic, exponential, logarithmic and trigonometric functions (including their inverses, and related functions). Also graphs of functions, and conic sections and the solution of systems of linear inequalities.

^{*}Suggested Heqis number



State of New Jersey

**GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028**

DEPARTMENT OF SOCIOLOGY

October 22, 1981

To: Fran Masat, Chair
Department of Math/Computer Science

From: Ted Tannenbaum, Chair

Re: Change in course titles

I reviewed, with the department, your proposal for changing course titles to identify, more specifically, the contents of the courses. The department had no objections to these changes. We feel that this will benefit students in their selection of Math/Computer Science courses.

TT/mm



State of New Jersey
GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

Industrial Education and Technology

July 6, 1981

Dr. Masat
Professor Seth Bergman
Mathematics/Computer Science
Glassboro State College

Dear Professor Bergman:

Thank you for allowing me to review your proposal for changes in the course 1701.102, Introduction to Computer Science.

While I can appreciate your desire to upgrade the course by specifying mathematics prerequisites, I am quite dismayed that this proposal would result in your department having no course offerings in computer science without prerequisites. Majors in our department are not required to take Introduction to Computer Science, but are advised to take it as an elective in the general studies group; this recommendation is based on the very fact that there are no prerequisites. Our department offers several no-prerequisite, "service" courses, and attract many non-majors that way. I fear that your proposal would put this course beyond reach for many students.

I submit that not all introductory computer experiences need to be mathematically oriented; if we are to expose people to such applications as word processing and CAI/CMI, for example, these do not require a mathematical background. I believe that requiring mathematical skills will scare students off. I perceive that you are thinking primarily of your computer science majors in this instance; for them, your proposal makes sense. In view of Dr. Masat's current "awareness" project, I believe it is, or soon will be, essential to provide at least one course in introductory computer science open to all, regardless of background.

Sincerely,

Michael P. Guerard
Michael P. Guerard
Associate Professor

MPG/jlh



State of New Jersey

GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

DEPARTMENT OF PHYSICAL SCIENCES

September 21, 1981

Dr. Fran Masat, Chairman
Department of Mathematics
Glassboro State College
Glassboro, New Jersey 08028

Dear Fran:

This is a letter of support for your department's "1980-82 Reorganization of Remedial and Elementary Mathematics Courses". In particular, the proposal to upgrade Intro. Mathematics II - PreCalculus (PreCalculus Mathematics) will certainly be helpful to those Physical Science, Chemistry and Pre-engineering majors who enter Glassboro with insufficient preparation to go directly into Calculus I.

While the other proposals of the reorganization package have little direct significance for majors in the physical sciences, they will have the effect of closing sequencing gaps, reducing confusion in course selection, and organizing the gamut of elementary mathematics courses into a logical and easily understood system.

For the above reasons, I urge that the entire reorganization proposal be approved and implemented as soon as possible.

Sincerely yours,

A handwritten signature in cursive script that reads "Lawrence J. Delaney".

Lawrence Delaney,
Chairman, Curriculum Committee,
Department of Physical Sciences.

LD:Y



State of New Jersey
GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

ADMINISTRATIVE STUDIES DEPARTMENT
(609) 445 6025

October 7, 1981

To: Fran Masat, Chairperson
Mathematics Department

Thank you for taking the time today to review with our faculty your proposal to reorganize remedial and elementary mathematics courses as detailed in your memorandum dated September 3, 1981.

Confirming today's discussion, this Division concurs in your proposal with the recommendation that you concentrate exclusively on BASIC in the Intro to Computer Science course rather than dilute this training by introducing another language.


Leo C. Beebe
Dean
Administrative Studies Division

LCB/shc

cc: Administrative Studies Chairpersons



State of New Jersey

GLASSBORO STATE COLLEGE
GLASSBORO, NEW JERSEY 08028

DEVELOPMENTAL EDUCATION
609-440-7023

October 23, 1981

Dr. Fran Masat
Chairman, Mathematics Department
Glassboro State College
Glassboro, NJ 08028

Dear Fran:

Thank you for forwarding the information to me on the Reorganization of Remedial and Elementary Mathematics Course. I heartedly endorse the proposal and commend you and the Mathematics Department for organizing such a plan.

We, in the Developmental Education program, have recognized the need for such a reorganization for some time. Most recently we have had discussions with our colleagues on the issue of the Math component in the remedial battery of courses. What you are proposing; others have already recognized as a need, and have moved to implementation.

I do not think it is necessary to give the statistical documentation of the number of students who we think have been placed in Math I, and should most probably have been advised to take a higher level Math. However, I would like you to know that we are prepared to assist you with actual figures; should you need them.

I trust the college community at large will accept and approve the reorganization plan as you have so outlined. The Developmental Education office most assuredly supports your recommendation.

Sincerely,

A handwritten signature in cursive script that reads "S. Claude".

S. Claude Damico, Ed.D.
Director
Developmental Education

SCD: amb