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FACULTY SENATE  
CURRICULUM COMMITTEE  
Approval Form

Department Political Science/Economics

Title Mathematical Economics

Sponsor(s) Dr. Aronfreed, Dr. Hamer, Dr. Mukhoti  
Prof. Hitchner, Dr. Kressler, No. of Credits 3

COURSE 2204.380 CONCENTRATION \_\_\_\_\_

Approved by the department Graduate ( )

Not recommended by the department Undergraduate (X)

Information copies forwarded: Academic Dean; Chairman; Curriculum Committee

Signature: Department Chairman

DIVISION

Consultation on proposal has been held

Comments: - Please include statement about method of evaluation of students.

Alan Donato 3/2/74  
Signature: Academic Dean/and/or Divisional Committee

CURRICULUM COMMITTEE

75-76 43

Proposal received

Open Hearing held

Returned to the department for the following reason(s):

Approved by the Curriculum Committee

Presented to Executive Committee of the Faculty Senate as information

Notifications forwarded: Vice President for Academic Affairs

Signature: Chairman, Curriculum Committee

ACADEMIC DEAN

I have reviewed the final documents as approved and concur with same.  
Budget, faculty and library resources are adequate for immediate implementation.

I have reviewed the final documents as approved and concur with same.  
Budget, faculty and/or library allocations for the current academic year  
are inadequate for immediate implementation or implementation in the next  
fiscal year. The earliest that the proposal might be implemented would be

HEGIS Taxonomy Number: \_\_\_\_\_

Signature: Academic Dean \_\_\_\_\_

Copies forwarded: Chairman, Curriculum Committee; Department Chairman;  
Provost; Registrar

REGISTRAR

Approved course description received

Signature: Registrar \_\_\_\_\_

PROVOST

Official copy and approval sheet filed

Signature: Provost (or designee) \_\_\_\_\_

- Note:
- 1) Course proposal format is attached
  - 2) A copy of this approval form should accompany each proposal
  - 3) A copy of a proposed catalogue description of the course must accompany the proposal as a separate page.

GLASSBORO STATE COLLEGE  
GLASSBORO, NEW JERSEY  
NOVEMBER, 1975

COURSE PROPOSAL

I. Identification

- A. Title of the course: Mathematical Economics
- B. Department: Political Science/Economics
- C. Sponsors: Dr. Eva Aronfreed, Chairperson

The Committee on the Economics Major Program

II. Essence

- A. Graduate or undergraduate course: undergraduate
- B. Semester Hours Credit: 3
- C. Course level: 300, suggested Hegis number 2204.380
- D. Prerequisites: 2204.101, 2204.102, and 2204.131 or instructor's permission.
- E. Position of the course in the current and planned departmental curricular structure: For the economics major, it is a specialized elective, but for the college community, it is a free elective.
- F. Suggested time and scale of implementation: The course will be offered for the first time in the fall of 1977 with an expected enrollment of 15 students.

III. Other Details

- A. Adequacy of the present staff: The present staff is adequate.
- B. Library facilities and needs: Library holdings are adequate.
- C. Space needs: The course requires a conventional classroom.
- D. Distinguishing characteristics of the course: In introductory and intermediate economics courses either graphical or simple

algebraic formulations and solutions of economic problems are usually provided. In this course more precise mathematical models are applied to the majority of theoretical problems in macroeconomics and microeconomics.

- E. Major goal of the course: To provide students with the ability to develop and apply mathematical models to standard economic problems.

#### IV. Topical Outline

1. Variables, functions, and equations
  2. Fundamental functions and series
  3. Basic functional equations in economics
  4. Sets, limits and continuity
  5. Derivatives and economic applications
  6. Partial derivatives and economic applications
  7. Differentials and differentiation in economics
  8. Integrals, integrations, and economic applications
  9. Linear differential equations in economics
  10. Linear difference equations in economics
  11. Matrix and vector analysis
  12. Mathematical analysis for programming
  13. Simplex methods in programming
  14. Linear programming and activity analysis
  15. Linear programming and the theory of games
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V. Rationale

It is very important that the serious student of economics, especially an economics major, develop an ability to apply mathematical techniques to the basic problems addressed in economics.

VI. Results of Consultation

Dr. John Sooy, Chairperson of the Department of Mathematics, was consulted on November 17, 1975. He expressed his support for the course.

VII. Catalogue Description

Studies economic theory and its formulation using mathematical techniques, notation and language.

VIII. Method of Student Evaluation

Evaluation of student performance will be made on the basis of in-class examinations and/or projects/term papers.

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