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The Two Hundred and Nineteenth Report of the Curricular Affairs Committee: Proposal for a B.S. Degree in Applied Quantitative Economics

University of Rhode Island Faculty Senate

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THE UNIVERSITY OF RHODE ISLAND
Kingston, Rhode Island

FACULTY SENATE
BILL

Adopted by the Faculty Senate

TO: President Edward D. Eddy

FROM: Chairperson of the Faculty Senate

1. The attached BILL, titled The Two Hundred and Nineteenth Report of the Curricular Affairs Committee: Proposal for a B.S. Degree in Applied Quantitative Economics, is forwarded for your consideration.
2. The original and two copies for your use are included.
3. This BILL was adopted by vote of the Faculty Senate on October 10, 1985 (date)
4. After considering this bill, will you please indicate your approval or disapproval. Return the original or forward it to the Board of Governors, completing the appropriate endorsement below.
5. In accordance with Section 10, paragraph 4 of the Senate's By-Laws, this bill will become effective October 31, 1985 (date), three weeks after Senate approval, unless: (1) specific dates for implementation are written into the bill; (2) you return it disapproved; (3) you forward it to the Board of Governors for their approval; or (4) the University Faculty petitions for a referendum. If the bill is forwarded to the Board of Governors, it will not become effective until approved by the Board.

October 11, 1985
(date)

Richard Katula
Richard Katula
Chairperson of the Faculty Senate

ENDORSEMENT

TO: Chairperson of the Faculty Senate

FROM: President of the University

Returned.

- a. Approved _____.
- b. Approved subject to final approval by Board of Governors ✓.
- c. Disapproved _____.

10/16/85
(date)

Edward D. Eddy
President

THE UNIVERSITY OF RHODE ISLAND
Kingston, Rhode Island

FACULTY SENATE

MINUTES

Faculty Senate Executive Committee Meeting #6 - September 24, 1985

1. The meeting was called to order at 8:00 a.m. in the Faculty Senate Office, Chairperson Katula presiding. All members were present.
2. The Minutes of Executive Committee Meeting #4, September 10, 1985, were approved.
3. Ms. Grubman reviewed for the Executive Committee possible items of business for the the Agenda for Faculty Senate Meeting #2, October 10, 1985.
4. The Executive Committee made the following additional committee appointments for 1985-86:
 - Professor Marjorie Caldwell, FSN, to the Honors Program and Visiting Scholars Committee, replacing Professor Arthur Stein, PSC, for the 1985-86 academic year;
 - Professor James Prochaska, PSY, to the Research Council for 1985-86 and 1986-87.
5. The Executive Committee reviewed the following discussion topics for their meeting that afternoon with President Eddy:
 - A. The restrained funding request;
 - B. Composition of the legislative Blue Ribbon Study Commission;
 - C. An up-date on plans for using the Mackal Gift for a new athletics facility;
 - D. Possible issues for consideration by the Joint Educational Policy Committee;
 - E. Consideration of whether the University needs some form of stimulation for academic direction (examples of stimulation could include guest speakers or a conference on an issue of interest to the educational community).

The meeting was adjourned at 8:45 a.m.

Respectfully submitted,
Shella Black Grubman

SBG:DD

THE UNIVERSITY OF RHODE ISLAND
Kingston, Rhode Island
FACULTY SENATE

September 20, 1985

Faculty Senate Curricular Affairs Committee
Two Hundred and Nineteenth Report

Proposal for a B.S. Degree
in Applied Quantitative Economics

At its meeting of April 8, 1985, the Faculty Senate Curricular Affairs Committee approved the proposal from the College of Arts and Sciences and the Department of Economics for the addition of a new Bachelor of Science degree in Applied Quantitative Economics. In accordance with section 8.85.10 of the University Manual, the Curricular Affairs Committee forwarded the proposal to the Office of the Vice President for Business and Finance with a request that a budgetary impact statement for the proposal be prepared. In his memorandum dated May 28, 1985 to the Faculty Senate, Mr. J. Vernon Wyman, Assistant to the Vice President for Business and Finance, stated that "from the perspective of expenditures, it would appear that the program, as it is currently proposed, would not increase the budgetary requirements for the Economics Department."

Based on Mr. Wyman's statement, the Faculty Senate Executive Committee concluded on September 17, 1985 that the proposed B.S. degree does not require review and ranking by the New Program Review Committee because it meets the criteria for exemption set forth in section 8.85.24 of the University Manual:

...if the program can be entirely supported by reprogramming existing departmental funds, or if the amount of general revenue funds required per year does not exceed the current calendar year minimum salary of an instructor, no review under 8.85.20 shall be required.

The Curricular Affairs Committee recommends that the Faculty Senate approve the following proposal for the creation of a new Bachelor of Science Degree in Applied Quantitative Economics (The proposal is in the format required by the Board of Governors for Higher Education):

A. PROGRAM INFORMATION:

1. Name of institution.

University of Rhode Island

2. Department, division, school or college involved.
Department of Economics, College of Arts and Sciences
3. Title of proposed program and name of degree or certificate to be conferred.
Bachelor of Science in Applied Quantitative Economics
4. Academic area, field of study and subspecialties, or area of concentration/specialization.
Economics
5. HEGIS title and classification code number for the proposed program.
HEGIS title classification code
6. Intended date of program initiation.
Fall 1986
7. Anticipated date for granting first degrees or certificates.
Spring 1987
8. Intended location of program.
Kingston
9. Description of institutional review and approval process.
Proposal was reviewed and approved by the Department of Economics, College of Arts and Sciences and Faculty Senate Curricular Affairs Committee.
10. Summary description of the proposed program.
The program emphasizes the development of quantitative tools, writing skills, and computing skills as applied to research in economics.

11. Signature of President.

12. Person to be contacted during the review:

Dr. M. Beverly Swan
Assistant Vice President for Academic Affairs
The University of Rhode Island
Kingston, RI 02881
(401) 792-2447

or

Professor James L. Starkey, Chair
Department of Economics
The University of Rhode Island
Kingston, RI 02881
(401) 792-2212

B. RATIONALE:

1. Describe the nature of the proposed program, including: program objectives; significant features of program; other descriptive comments.

The objective of the Proposed B.S. Applied Quantitative Economics Program is to provide undergraduates with the quantitative preparation necessary to be competitive at good graduate schools and with marketable skills should they choose to enter the job market. The program features a solid preparation in mathematics, statistics, computing, and technical writing. This preparation is achieved through prerequisites, the use of mathematics in theory courses, and special-applied courses that emphasize the use of quantitative methods, computing, and report writing.

2. Explain the needs which this program addresses, including: societal needs; academic need to complement or support other existing programs; student requests; other evidence of need.

Over the past two decades, the economics profession has experienced a dramatic transformation. One cannot function today as a professional economist without rigorous training in the use of mathematical models and sophisticated statistical techniques. In short, the tasks carried out by the professional economist have increasingly become "technical" in nature. Both employers and graduate schools accordingly have come to place great weight in their selection processes on an applicant's quantitative training and/or competency.

Most of our majors do not aspire to become professional economists. Instead they seek "literacy" in economics within a broader liberal arts or quasi-business curriculum. Such "literacy" is seen as helpful but not central to their occupational aspirations (e.g., law, public administration). These students do not seek technical competency, and, in fact, typically lack the background, aptitude, and/or interest required to perform well in a curriculum emphasizing mathematics and statistics. Our curriculum has evolved with their interests and abilities in mind. That curriculum consequently does not meet the needs of the student who seeks a career as an economist.

This creates a dilemma. If the curriculum is altered to meet the needs of those who aspire to a professional career, it will no longer be attractive to, or appropriate for, the large majority of those who now choose economics as a major. Many, if not most, of these students will undoubtedly find it necessary and/or desirable to select another major. On the other hand, if the curriculum is not altered, we will be shortchanging those of our students who seek a career in economics, who will be competing upon graduation with more appropriately qualified graduates from other major universities. Significantly, there is no alternative public institution within the state of Rhode Island where those seeking a career in economics can obtain the requisite undergraduate training.

The dual-option major is a response to this dilemma. It provides an appropriate curriculum for each type of student: a B.A. to reflect the non-technical course offering appropriate for the student who does not plan to become a professional economist; and a B.S. to reflect the technical training appropriate for the professionally-oriented student. As detailed below, this change can be implemented within the present authorized Department staffing level.

3. If the proposed program is in an occupational field, describe the current and projected manpower needs and job opportunities at the national, state, regional and local levels. Identify specific data sources used to determine these needs. Indicate potential employers of persons trained in the program.

Economists must thoroughly understand economic theory and mathematical methods of economic analysis. Since many beginning jobs in government and business involve the collection and compilation of data, a thorough knowledge of basic statistical procedures is required. Economists must be objective and systematic in their work and must be able to express themselves effectively both orally and in writing. In addition to courses

in macroeconomics, microeconomics, econometrics, and business and economic statistics, training in computer science is highly recommended.

A bachelor's degree with a major in economics is sufficient for many beginning research, administrative, management trainee, and business sales jobs. However, graduate training increasingly is required for advancement to more responsible positions.

In the Federal Government, candidates for entrance positions generally need a college degree with a minimum of 21 semester hours of economics and three hours of statistics, accounting, or calculus. However, because competition is keen, additional education or experience may be required (emphasis added).

Job Outlook: Employment of economists is expected to grow faster than the average for all occupations through the 1980's. In addition to growth in demand for economists, many job openings will result from transfers, deaths, retirements, and other separations from the labor force.

Overall, economists are likely to have more favorable job prospects than most other social scientists. Opportunities should be best for economists in business and industry, research organizations, and consulting firms, reflecting the complexity of the domestic and international economies and increased reliance on quantitative methods of analyzing business trends, forecasting sales, and planning purchases and production operations. Employers will seek economists well trained in econometrics and statistics.

Generally, a strong background in economic theory and econometrics provides the tools for acquiring any specialty within the field. Those skilled in quantitative techniques and their application to economic modeling and forecasting are likely to have the best job opportunities.

All information in B.3. abstracted from:
Occupational Outlook Handbook
1982-83 Edition
U.S. Department of Labor, Bureau of Labor Statistics
April 1982, Bulletin 2200, p. 104-106

4. Describe the clientele for whom the program is intended. Estimate the primary source of students. Indicate the extent to which the program will attract additional students to the campus, or draw students from other existing programs. For graduate programs, list those programs which would be a potential source of students.

Based on past experience we expect, at best, 1/6 (15-20) of the annual flow of economics concentrators will be interested in this program. In addition, we have indications of interest from math majors who are looking for an applied area. We also expect to attract students with a strong vocational interest, who want to concentrate in a field with more "social" aspects than offered by the business curriculum.

5. Estimate the proposed program size (provide projected annual full-time, part-time, and FTE enrollments for one complete program cycle).

At present, we feel we must limit the program size to 20 students per year. This is primarily because we wish to keep class size appropriate to encourage student-instructor interaction. Furthermore, B.S. courses, because of their applied nature, are especially teacher time-intensive: Many assignments require extensive teacher preparation and applied quantitative economics evaluation.

6. List the requirements for students to be admitted and retained in the proposed program.

B.S. Degree:

- (a) Minimum of 30 ECN credits with no substitution.
- (b) Minimum of six (6) ECN credits from 400-500 level.
- (c) Required courses:
 - (i) Within concentration: ECN 125, ECN 126, ECN 323, ECN 324, ECN 361, ECN 376, and ECN 444.
 - (ii) Outside concentration: MTH 141, MTH 142, MTH 215; EST 409 or both MGS 201 and MGS 202 with B or better; CSC 201; SPE 101 and WRT 333.

C. INSTITUTIONAL ROLE:

1. Explain how the proposed program is consistent with the role of the institution and how it is related to the institution's long-range plans for program development.

Students come to the university for different reasons. At one extreme, some see the university experience as "consumption" of culture and learning for its own sake. At the other extreme, a college education is viewed as purely instrumental; as an investment in the future. Between these extremes, where most students lie, are students who wish to expand their cultural perimeter while at the same time enhancing their vocational opportunities. The role of the university is, therefore, not exclusively educational or vocational. It must provide students

with opportunities to satisfy both needs. The proposed BS Applied Quantitative Economics program is intended to expand the vocational opportunities of the concentrators without sacrificing the broader educational elements of the economics program.

2. Indicate whether the proposed program is entirely new to the institution or is an extension of an existing area of study. Explain the relationship of the program to other programs offered.

The program is an extension of the existing economics program. It requires the addition of 3 courses, only one of which is actually new. The microeconomics and macroeconomics courses are simply reformatted versions of existing micro and macro theory courses. ECN 444 is a new course. The prerequisite list is longer, but the total number of credits needed to graduate as an economics concentrator remains the same.

D. CONTENT:

1. Prepare a curriculum display based on the information requested below.

- a. Name of courses, departments, and catalog numbers. Indicate all proposed new courses.
- b. Brief course descriptions for new courses, preferably as these will appear in catalog.

ECN 323 Intermediate Microeconomics (I,3) Theory of consumer behavior, the firm, market equilibrium, general equilibrium, imperfect competition, optimization over time and linear models. Models of microeconomics are developed using calculus and linear algebra. Pre: 125, 126; MTH 141, 142, 215.

ECN 324 Intermediate Macroeconomics (II,3) Theory of consumption, investment, monetary and fiscal policy, static and dynamic models, economic growth, unemployment and inflation. Macroeconomics developed using calculus and linear algebra. Pre: 125, 126; MTH 141, 142, 215.

ECN 444 Applied Research in Economics (II,3) The application of economic theory, econometrics, and computing to specific problems. Emphasis on formulation of hypothesis in mathematical form, transformation into forms suitable for empirical testing, testing using the computer, report writing and oral presentation. Pre: 323, 324, 376.

c. Required courses in area of specialization.

ECN 125, 126, 323, 324, 361, 376, 444

d. Options, if any, available in required area of specialization.

None

e. Course distribution requirements, if any, within the program.

Must take one ECN 400-500 level course in addition to ECN 444.

f. Total number of free electives available after specialization and general education requirements are satisfied.

39, see D.2.

g. Total number of credits required for the completion of the program or for graduation.

30, 120

2. Present a typical curriculum for one program cycle, and where applicable, include cycles for subspecialties.

A sample program with all program requirements and prerequisites is laid out below. In addition to the courses indicated a student must take 24 credits in Fine Arts & Literature, Natural Science, Letters, and Social Science (6 each), and 6 credits in a Foreign Language or a Culture Cluster. Some prerequisites also satisfy general education requirements. After satisfying all program and general education requirements the student will have 39 credits available for electives.

Freshman

Fall

ECN 125, Economic Principles I
MTH 141, Introduction to Calculus
SPE 101, Fundamentals of Oral Communications

Spring

ECN 126, Economic Principles II
MTH 142, Intermediate Calculus with Analytic Geometry

Sophomore

Fall

WRT 333, Scientific and Technical Writing
MTH 215, Linear Algebra
EST 409, Statistical Methods in Research

Spring

CSC 201, Introduction to Computing

Junior

Fall

ECN 323, Intermediate Microeconomics

Spring

ECN 324, Intermediate Macroeconomics
ECN 376, Econometrics

Senior

Fall

ECN 361, History of Economic Doctrines
ECN Elective
ECN Elective

Spring

ECN 444, Applied Research in Economics
ECN 400-500

3. Describe certification/licensing requirements, if any, for graduates of program and indicate the agencies and timetables for graduates to meet those requirements.

none

E. INTERINSTITUTIONAL CONSIDERATIONS:

1. List similar programs offered in the state and region.

none

2. Compare the objectives of the proposed program to those of similar programs.

NA

3. Describe cooperative arrangements that will be made with institutions offering similar programs. (Written confirmation of agreements should be attached pertaining to uses of faculty, library, facilities, etc.)

NA

4. Describe provisions that will be made for students in the other Rhode Island public institutions of higher education to transfer in or out of the proposed program. Describe any transfer agreements with private institutions.

Transfers will be subject to enrollment limits.

5. Estimate the projected impact of the proposed program on the other postsecondary institutions in Rhode Island.

none

6. If external affiliations are required for the proposed program, identify agencies with which arrangements have been made to provide support or experiences for students. (Indicate the status of any arrangements made and append letters of agreement, if appropriate.)

none

7. Indicate whether the proposed program will be available to regional students under agreements with the New England Board of Higher Education.

Marc Rand informs me the NEBHE status of a program cannot be determined until it is approved by the Board of Governors.

F. RESOURCES:

1. Administration

- a. Indicate how the proposed program will be administered, and the degree to which the administration of the proposed program will affect the administrative structure of the organizational unit in which it is located.

The program will be administered by the Department Chairman as part of his regular duties.

- b. Indicate the name(s) and title(s) of the person(s) who will have administrative responsibility for the program, and the percent of time to be spent in the proposed program.

Marginal administrative time should be minimal. (See a.)

- c. Indicate annual administrative salaries and related costs to be associated with the proposed program. If selected individuals are to be phased into the proposed program, provide cost information for a multi-year period.

none

2. Faculty

- a. List present faculty who will be assigned to the proposed program. The following information should be provided for each: name; rank; area of speciality; highest degree earned; tenure status; full-time or part-time status; percent of time to be spent in proposed program; and courses taught/to be taught.

There will be no specific faculty assignment to the program.

- b. List anticipated additional faculty. Provide the information requested in a. above, and indicate whether these are anticipated to be reassignments or new positions.

none

- d. Summarize the annual costs for a., b., and c. above by indicating total personnel for each category and their salaries and fringe benefits (adjusted for the proportion of their time devoted to the proposed program). Distinguish between existing resources and new resources. If resources are to be provided by more than one department, please specify. Include a multi-year cost statement if individuals are to be phased into the proposed program over a period of time.

zero

3. Learning Resources

- a. Evaluate learning resources in terms of overall capability to satisfy the needs of the proposed program.

- b. Estimate the numbers of relevant print and non-print library materials available in the subject matter field of the proposed program.

The University's computer and library facilities are quite adequate to support this program.

- c. Compare learning resources to recommendations of national accrediting agencies, the standards of the Association of College and Research Libraries, and/or any other recognized measures of general library adequacy in terms of collections, staff, space and operations.
- d. If library and other learning resources are not considered sufficient or if upgrading is considered necessary for the development of the proposed program, the additional needs should be detailed.
- e. Estimate annual costs for learning resources. Such cost information should reflect the annual operation and maintenance of the collection (recurrent costs for library and other learning resources, such as subscriptions of periodicals, new acquisitions, etc.) as well as costs for the necessary additional resources. Cost information should be provided to demonstrate total annual costs and to project costs through the first few years of the proposed program.

NA

4. Facilities

- a. Evaluate existing facilities (e.g., classrooms, laboratories, and office space). If new or renovated facilities are necessary, explain in detail (e.g., requirements, costs, sources of revenue, and expected date of completion).
- b. Evaluate existing instructional and support equipment (e.g., computers, laboratory equipment and supplies). If additional equipment is necessary, explain in detail (e.g., initial and replacement costs and sources of revenue).

NA

5. Operating Expenses

Operating expenses (e.g., travel, office supplies and repairs) should be adequately covered by the operating budget. Provide a

list of operating expenses and evaluate budget adequacy for proposed program. Distinguish between existing and new resources. Specify if resources are to be provided by more than one department.

0

6. Indicate available funds for scholarships and fellowships.

0

7. Cost summary and Revenue Estimates

0

G. EVALUATION:

1. Describe what the institution has done to assure that the quality of the proposed program will be high. Include relevant examples, materials from similar programs, and use of external consultants.

The university and a good research library and excellent computer facilities, and a first class faculty.

2. If the proposed program is eligible for specialized accreditation, indicate name and address of the accrediting agency and a list of accreditation requirements. If specialized accreditation is available but not sought, indicate why.

NA

3. List the criteria by which the institution plans to evaluate the program during the first three to five years. Describe provisions made for external evaluation, as appropriate. Report the findings of such periodic institutional evaluations of the program and the extent to which the estimates and assertions contained in the initial proposal have or have not been fulfilled. This report is to be sent to the Commissioner and is to be accompanied by plans for corrective action, as appropriate.

Enrollments, student feedback, graduate school enrollments, vocational achievement.

THE UNIVERSITY OF RHODE ISLAND
Kingston, Rhode Island

FACULTY SENATE

September 24, 1985

Faculty Senate Curricular Affairs Committee
Two Hundred and Twentieth Report

During the summer of 1985 and at its meeting of September 23, 1985, the Curricular Affairs Committee considered the following matters now presented to the Faculty Senate.

SECTION I

Informational Matters

A. College of Arts and Sciences

1. Department of Botany

CROSS-LIST: BIO 101 as BIO 101 (Or BOT 101) Biology of Plants.

2. Department of Microbiology

CHANGE: Method of Instruction for MIC 201 and MIC 211 to "(Lec. 3, Lab. 3)."

3. Department of Zoology

CROSS-LIST: BIO 102A as BIO 102A (or ZOO 102A) General Animal Biology.

B. College of Engineering

Department of Electrical Engineering

ADD: ELE 215X Circuits Laboratory II (11,1) AC measurements, impulse and frequency response of linear circuits, resonance, operational amplifier circuits, simulation of transfer functions, filters. (Lab. 3) Pre: 214 and 212 which may be taken concurrently. Staff

SECTION II

Curricular Matters Which Require Confirmation by the Faculty Senate

A. College of Arts and Sciences

1. Department of Microbiology

C.A.C. #220--85-9-24

a. ADD: MIC 333 Immunology and Serology (11,3) Introduction to the immune response; host resistance to infection; immunopathology; antibodies, antigens, and use of serological techniques. (Lec. 2, Lab. 3) Pre: 201 or 211. Laux

b. CHANGE: Requirements for the undergraduate degree in Microbiology from "MTH 109 or 141 and 141 or 142" to "MTH 141 and either MTH 109, 111, 142, CSC 201 or EST 407."

2. Department of Sociology and Anthropology

ADD: APG 327 Roots of Bioanthropology (1 or 11,3) An examination of some classic works in human evolution and physical anthropology. Designed to provide an understanding of the philosophical and historical development of biological anthropology. (Lec. 3) Loy

B. College of Resource Development

1. Department of Plant Science

a. ADD: The following new courses:

1) PLS 315 Introduction to Horticulture Therapy (11,3) Objectives and techniques of applying horticulture and horticulture-related skills to therapeutic and rehabilitative programs. (Lec. 3) Pre: 204 or permission of instructor. Gough and Shaw

2) PLS 316 Gardens and Therapy (1,3) Identification, culture and use of garden flowers and herbs. Garden planning and design with emphasis on those appropriate for special populations. (Lec. 2, Lab. 2) Pre: 204 or permission of instructor. Shaw

3) PLS 415 Theories and Practices in Therapeutic Horticulture (11,3) Concepts and methods of using plant and gardening activities in horticulture therapy programs for exceptional individuals in most types of therapeutic situations. (Lec. 1, Lab. 4) Pre: 315, 316. Not for Graduate Credit. Gough and Shaw

b. DELETE: PLS 352 Herbaceous Plants (11,3)

2. Department of Plant Pathology-Entomology and Department of Plant Sciences

MERGE: Departments of Plant Pathology-Entomology and Plant Science into a single Department of Plant Sciences