# SIMON FRASER UNIVERSITY

**MEMORANDUM**

S.79-44

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|---|---|
| **To**..... Senate ..... | **From** Office of the Dean of Graduate Studies |
| ..... | ..... |
| **Subject**.... New Graduate Course Proposals ..... | **Date**..... April 18, 1979 ..... |

MOTION: That Senate approve the following new graduate courses:

Econ 819-4 Mathematical Programming for Economics and Commerce

Econ 820-4 Analysis of Dynamic Processes

Econ 871-4 Seminar in Financial Accounting

Econ 872-4 Seminar in Managerial Accounting

These courses were approved by the Executive Committee of the Senate Graduate Studies Committee at its meeting on March 5, 1979.

Jon Wheatley
Dean of Graduate Studies

mm/
attach.

# SIMON FRASER UNIVERSITY

**MEMORANDUM**

To W. Cleveland

From S. Easton
Chairman of the Graduate
Program in Economics and Commerce

Subject New Graduate Course Proposals

Date March 16, 1979

Course: Econ. 819. Bugetary implications of this course should read:

No additional faculty is required. By reducing the frequency of present undergraduate courses it is possible to offer this course at the graduate level.

Econ. 820. Same as the above

Course: Econ. 819. I have spoken with E. Love who will teach this course. He informs me that although D. Granot's name appears on the Econ. 819 write-up and his, Love's, on the write-up for Econ. 820, in fact they collaborated in the preparation and development of both courses. Thus there is no problem in finding a faculty member interested and willing to pursue both 819 and 820.

Econ. 819. Love also notes that the bibliography and outline of the library analysis for 820 is appropriate for Econ. 819.

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Economics and Commerce Course Number: ECON. 819

Title: Mathematical Programming for Economics and Commerce

Description: Topics include dynamic programming, linear and non-linear programming, stochastic programming, optimization techniques; game theory.

Credit Hours: 4 Vector: 4-0-0 Prerequisite(s) if any: Instructor's consent

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 5-15 When will the course first be offered: 1978-1

How often will the course be offered: once per year, subject to minimal enrollment constraint

JUSTIFICATION:

The purpose of this course is to introduce and study some of the basic optimization models, techniques and concepts of solutions which are widely employed in Economics and Commerce.

RESOURCES:

Which Faculty member will normally teach the course: Love.

What are the budgetary implications of mounting the course: nil. - See DR. EASTON'S Memo of 16 MARCH /79.

Are there sufficient Library resources (append details): Yes - many available texts cover this area.

Appended: a) Outline of the Course
b) An indication of the competence of the Faculty member to give the course.
c) Library resources

Approved: Departmental Graduate Studies Committee: [signature] Date: 16 June 78

Faculty Graduate Studies Committee: [signature] Date: 27 Feb. 79

Faculty: [signature] Date:

Senate Graduate Studies Committee: [signature] Date: 27 March/79

Senate: Date:

MEMORANDUM

To Planning and Priorities Committee

From Daniel Granot

D.E.C.

Subject Proposed Graduate Course

Date November 28, 1977

I enclose

- outline of my proposed graduate course
- memorandum I have distributed among the graduate students in the department
- results of a brief survey conducted, to estimate the demand for the proposed course.

In further support of my proposed graduate course,

1. As the survey indicates, there are at least 11 graduate students that would like to take this course in the spring. This, no doubt, reflects on the strong existing demand for such a course in our graduate program.

2. As argued in the "memorandum for the graduate students..." the proposed course will contribute to other active graduate programs in the department. For example, nonlinear and stochastic programming are being recognized as major tools for analyzing and solving portfolio selection and related stochastic problems.

3. The course will, no doubt, strengthen our current program (which is a special arrangement program) in management science. There are a few graduate students in the department who list management science (or equivalently operations research) as a major or minor area of interest, for whom this course will be invaluable.

Thus, I strongly believe that the proposed graduate course is well within the stated objectives and goals of the department.

As there are at least 11 graduate students that would like to take the course in the coming spring, I sincerely hope that resources will be found to enable me to provide this course in the spring.

Daniel Granot

encls.
DG:CP

D. Granot

# SIMON FRASER UNIVERSITY

## MEMORANDUM

To Graduate Curriculum Committee

From Daniel Granot

Subject Course proposal for a graduate course in Commerce

Date October 18, 1977

TITLE OF COURSE: Mathematical Programming for Economics & Commerce

The purpose of this course is to introduce and study some of the basic optimization models, techniques and concepts of solutions which are widely employed in optimization and game theory problems that frequently occur in commerce and economics. These optimization models and techniques are very applicable in such diverse areas as economic planning, energy modelling, price decentralization, capital budgeting, portfolio selection, runway cost allocation, pricing in communication networks and more. The topics to be covered include: Linear Programming and Duality; Decomposition Techniques in Linear Programming; Non Linear and Stochastic Programming with Applications to Portfolio Selection Problems; Dynamic Programming; Game Theory with Application to the Cost Allocation and Pricing, and Activity Analysis.

The emphasis in the course will be on theory, modelling and computation.

The time to be allocated to the various topics will tentatively be as follows:

| | |
|---|---|
| Linear Programming; Duality; Sensitivity Analysis (including some case studies) | 3 weeks |
| Decomposition Techniques | 1 week |
| Dynamic Programming | 1 week |
| Non Linear and Stochastic Programming | 3 weeks |
| Activity Analysis | 2 weeks |
| Game Theory | 3 weeks |

Daniel Granot

Daniel Granot

# SIMON FRASER UNIVERSITY

## MEMORANDUM

To: Graduate Curriculum Committee

From: Daniel Granot

Subject: Proposed course: Mathematical Programming for Economics and Commerce

Date: October 26, 1977

I enclose an outline of a proposed graduate course.

I am convinced that the proposed graduate course will attract students from various disciplines in our department. For example,

a) The last year Nobel reciepients in Economics, Professors Kantorovitch and Koopmans, received their award mainly for their contribution to optimization and linear programming. This, no doubt, indicates the relevance of optimization techniques and models for economics.

b) The topics: Dynamic Programming; Non-linear and Stochastic Programming should be attractive to the finance students. Indeed, Professor P.L. Cheng indicated to me that he will recommend all his finance students to take this course.

c) The course should attract Commerce students; some of the topics covered are applicable to capital budgeting, joint cost allocation models and solutions (and, of course, linear programming).

d) The students interested in studying Management Science, that as Professor P. Copes indicated may be quite a few, will certainly welcome such a course.

Daniel Granot

Daniel Granot
Assistant Professor

DG/mc

# SIMON FRASER UNIVERSITY

## MEMORANDUM

To: Graduate Students in Economics and Commerce

From: Daniel Granot

Subject: A new graduate course

Date: November 2, 1977

I would like to interest you in a graduate course which I propose to offer either this coming Spring or next year. For your convenience I attach a detailed outline of the proposed course.

This course is intended for graduate students. However, qualified undergraduate students are welcome to take it.

The course should be attractive to students from various disciplines in Economics and Commerce, as well as from other departments, e.g. Mathematics and Computing Science. For example:

1) Economics; linear programming is perhaps the most popular and effective model for large scale, long range planning. For example, a linear programming model was found to be the suitable model for assessing the physical impact on the U.S. economy of a changing energy picture. In addition; last year's Nobel receipients in Economics, Professors Kantorovitch and Koopmans, received their award mainly for their contribution to optimization and linear programming. This, no doubt, indicates the relevance of optimization techniques and models for economics.

2) Non linear and stochastic programming should be of particular interest to the finance students. Various portfolio selection problems can be formulated as non linear (quadratic) programming problems or as stochastic programming. In the course, we will cover some of the theoretical foundation of non linear programming and will discuss some of the algorithmic approaches for solving these problems.

3) The course should attract commerce students; some of the topics covered are applicable to capital budgeting, joint cost allocation models and solutions (and, of course, linear programming).

4) To students who might be interested in Management Science or Mathematical Programming; the course will cover some of the most important topics in these areas.

5) Besides, Game Theory is a fun subject!

Any interested student who would like to see me with regard to the proposed course, please drop by (A.Q. 6241) or call 4519, or leave a message in my mail box.

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form

**CALENDAR INFORMATION:**

Department: Economics/Commerce Course Number: ECON. 820

Title: Analysis of Dynamic Processes

Description: To analyze the operation of dynamic (time-varying) economic/ business systems with emphasis on model formulation and optimization procedures.

Credit Hours: 4 Vector: Prerequisite(s) if any:

**ENROLLMENT AND SCHEDULING:**

Estimated Enrollment: 10 When will the course first be offered: Summer Session

How often will the course be offered: Annually subject to demand

**JUSTIFICATION:**

- The subject material currently not being covered at Graduate level.
- A management science area that has broad applications in Economics/ Business.

**RESOURCES:**

Which Faculty member will normally teach the course: C. E. Love

What are the budgetary implications of mounting the course NIL - SEE Memo of 16 March /79 FROM DR. S. EASTON.

Are there sufficient Library resources (append details): yes

Appended: a) Outline of the Course
b) An indication of the competence of the Faculty member to give the course.
c) Library resources

Approved: Departmental Graduate Studies Committee: Date: 16 Jan 78

Faculty Graduate Studies Committee: Date: 27 Feb 79

Faculty: R C Brown Date:

Senate Graduate Studies Committee: B P Clayman Date: 27 March /79

Senate: Date:

# DYNAMIC PROCESSES

| Content | Areas of Application | Weeks |
|---|---|---|
| 1. Conventional Dynamics Programming Procedures | - general distribution of effort problems.<br>- the bond-refunding problem<br>- asset replacement decisions | 2 |
| 2. State Increment Dynamic Programming | - dynamic network optimization (aircraft routing problems)<br>- multi-stage inventory control | 2 |
| 3. Decomposition of Dynamic Processes | - multi-location inventory control<br>- transfer prices decisions<br>- profit center vs cost center control | 2 |
| 4. Markov Processes | - optimal equipment repair decisions<br>- cash management problems<br>- optimal brand switching models | 2 |
| 5. Optimal Control Theory | - investment paths in macro-models<br>- optimal asset switching<br>- optimal trajectory for the supersonic transport and related problems | 3 |
| 6. Optimal Feedback Control | - control on a set point<br>- optimal inventory control with fluctuating demand<br>- simultation vs optimization | 2 |

# SIMON FRASER UNIVERSITY



**MEMORANDUM**

To Dean of Arts Office

From Mary Roberts
Social Sciences - Library

Subject Library support for proposed course, Economics 820, Analysis of Dynamic Processes

Date 31 July 78

1. MONOGRAPHS

The three main elements of the course are dynamic programming, optimal control, and Markov processes. To determine library support for the course, the number of titles under those and related subjects in the microfiche and card catalogues were counted. Results were as follows:

| | |
|---|---|
| Algorithms | 74 |
| Control theory | 142 |
| Economics - Mathematical methods | 108 |
| Economics, Mathematical | 246 |
| Game theory | 77 |
| Inventory control | 61 |
| Linear programming | 130 |
| Markov processes | 82 |
| Mathematical models | 54 |
| Mathematical optimization | 115 |
| Network analysis (Planning) | 32 |
| Non-linear programming | 24 |
| Non-linear theories | 44 |
| Operations research | 222 |
| Planning | 100 |
| Programming (Mathematics) | 121 |
| Stochastic processes | 110 |
| Stochastic programming | 5 |
| Total | 1547 |

This total includes reference works such as handbooks, bibliographies and dictionaries, and society proceedings and congresses, as well as circulating monographs.

2. JOURNALS, INDEXES AND ABSTRACTS

The library subscribes to the following abstracts in the fields of operations research and quantitative methods:

International abstracts in operations research. Amsterdam, North-Holland for the International Federation of Operations Research Societies. v.1, 1961- . quarterly.
*Complete indexing of O.R. journals and selective indexing of others in the fields of production, marketing, finance, statistics. Abstracts*

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*in each issue are classified as:*
*Models of common processes*
*Experiment and special applications*
*Theoretical*
*Professional*
*Access is through subject and author indexes which cumulate at the end of each year/volume.*

Operations research/management science. Whippany, N.J., Executive Sciences Institute. v.9, 1969- . monthly.
*Covers management of O.R., optimal allocation, game theory, simulation models, mathematical methods, probability, computers, and applications. Subject and author indexes cumulate at the end of each volume; reference is to page numbers.*

Quality control and applied statistics. Whippany, N.J., Executive Sciences Institute. v.1, 1956- . monthly.
*Statistical techniques (e.g. sampling, correlation, probability) applicable to business (e.g. forecasting, finance, sales control), production (e.g. work measurement, scheduling), and other fields. Subject and author indexes in each issue cumulate annually.*

Computer abstracts. Jersey, Technical Information Co. v.13, 1969- . monthly. Located with Sciences Indexes.
*Material classified under such headings as "System design"; "Applications: Business". Annual subject and author indexes.*

Computing reviews. New York, Association for Computing Machinery. v.1, 1960- . monthly. Located with Science Indexes.
*Sections 3.5 Management data processing*
*5.4 Mathematical programming*
*5.5 Mathematical statistics; probability*
*8.3 O.R./Decision tables*

Mathematical reviews. Providence, R.I., American Mathematical Society. v.1, 1940- . Located with Science Indexes.
*International and comprehensive. Covers books, journals, proceedings.*
*Sections 90Bxx Operations research and management science*
*90Cxx Mathematical programming*
*90Dxx Game theory*

In addition, the following more general indexes have sections on programming:

Index of economic articles. Homewood, Ill., Irwin. v.1, 1886/1924- .
"Prepared under the auspicies of The journal of economic literature of the American Economic Association."
*Section 200 covers quantitative economic methods and data: 210 covers econometric, statistical and mathematical methods and models, optimization, and programming.*

The journal of economic literature. Pittsburgh, American Economic Association, 1963- . quarterly.
*Section 200 as in the Index of economic articles.*

International bibliography of economics. Paris, UNESCO, v.1, 1952- . annual.
*Part B, Methods, covers programming.*

Key to economic science. The Hague, Martinus Nijhoff, v.1, 1953- . bi-monthly.

The Library subscribes to most of the journals covered by these indexes and abstracts.

Support appears to be sufficient in both quantity and quality for an 800-level course, without any more than normal expenditure. Dr. Love, who is to teach the course, says he has never experienced any difficulty in finding material in the library's collection.

MR:vk

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Economics and Commerce Course Number: ECON. 871

Title: Seminar in Financial Accounting

Description: An in depth analysis of current literature in financial accounting theory and practice. Emphasis will be placed on recent empirical research.

Credit Hours: 4 Vector: Prerequisite(s) if any: Permission of the instructor.

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 20 When will the course first be offered: Fall 1978

How often will the course be offered: Once a year

JUSTIFICATION:

No similar course exists at graduate level. It would give a flexibility to our existing graduate programme. It would increase the research interest within the department. Hopefully it would help to channel some of the students in academic accounting career.

RESOURCES:

Which Faculty member will normally teach the course: D. McDonald, T. Brown, T. Var

What are the budgetary implications of mounting the course: No additional faculty is required. By reducing the frequency of present undergraduate courses it ~~is possible to offer this course at graduate level.~~

Are there sufficient Library resources (append details): Yes. The library is adequate in terms of journals. Modest increase in monographs will be needed.

Appended: a) Outline of the Course
b) An indication of the competence of the Faculty member to give the course.
c) Library resources

Approved: Departmental Graduate Studies Committee: [signature] Date: 16 June 78

Faculty Graduate Studies Committee: [signature] Date: 27 Feb 79

Faculty: [signature] Date:

Senate Graduate Studies Committee: [signature] Date: 27 March 79

Senate: Date:

COURSE OUTLINE

SEMINAR IN FINANCIAL ACCOUNTING

Description: Intensive study, utilizing textbooks, CICA pronouncements, and articles and other extracts from the current literature, of the scope and measurement of accounting information for use by third parties. The primary emphasis is on the interrelated problems of asset valuation and income determination for a going concern, notably the issues pertaining to inventories, long-lived assets, intangibles, leases, and tax allocations, consignments, consolidations and foreign currency translations. Different theories in the literatures of accounting, economics, and law are critically reviewed in the context of current accounting practice and the supposed needs of the users of accounting information. The results of empirical research are introduced as relevant. The process by which the accounting profession, regulatory, and other groups participate in the establishment of "generally accepted accounting principles" is examined and critically evaluated. International comparisons are interwoven with Canadian experience.

Text-books: Skinner, Principles of Accounting, Eldon S. Hendriksen, Accounting Theory, Third Edition, CICA Handbook and collected articles.

Prerequisite: Permission of the instructor.

Grading : Final 50% , Research Paper 50%.

Coverage:

1. Evolution of Financial Reporting and Insitutional Development of Accounting Principles
2. Review of Conventional Accounting Models
3. The Timing of Revenue Recognition
4. Distinguishing the Extraordinary from the Ordinary
5. Accounting Effects of General Price Movements
6. Alternative Valuation Models
7. Objectives of Financial Reporting: Uniformity vs Flexibility
8. Investments in Equity Securities
9. Valuation of Inventories
10. Valuation of Depreciable Assets
11. Intangibles-Estimating Value of Going Concern
12. Accounting for Long -Term Leases
13. Income Tax Allocations- Inter and Intra-Period Allocations
14. Conclusion

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Economics and Commerce Course Number: ECON. 872

Title: Seminar in Managerial Accounting

Description: An integrative course intended to develop an appreciation of the interrelationship of managerial accounting and analytical, behavioral and technological considerations in analysis and design of control systems. Emphasis will be placed on empirical research.

Credit Hours: 4 Vector: Prerequisite(s) if any: Permission of the instructor.

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 20 When will the course first be offered: Winter 1979

How often will the course be offered: Once a year

JUSTIFICATION:

There is only one course at MBA level which is MBA 621 Management Information System. This course is a part of a package MBA programme. Therefore this course will be first course in Managerial Accounting at graduate level. It will emphasize empirical studies in this area. Will fulfill a much needed gap.

RESOURCES:

Which Faculty member will normally teach the course: T. Var, A. Amershi, A. Gutrie

What are the budgetary implications of mounting the course: No new faculty member is needed. By reducing the frequency of the present undergraduate courses this course could be offered.

Are there sufficient Library resources (append details): Library sources are sufficient.

Appended: a) Outline of the Course
b) An indication of the competence of the Faculty member to give the course.
c) Library resources

Approved: Departmental Graduate Studies Committee: Date: 10 Dec 78

Faculty Graduate Studies Committee: Date: 27 Feb 79

Faculty: Date:

Senate Graduate Studies Committee: Date: 17 April 79

Senate: Date:

COURSE OUTLINE

SEMINAR IN MANAGERIAL ACCOUNTING

Description: The objectives of the course are to provide the student with a conceptual framework, an exposure to some of the tools and techniques available, and a systematic procedure so that he can design, implemer and evaluate situationally- determined by management planning and control systems. Empirical research in Managerial Accounting.

Grading : Final Exam 50%, Research Paper 50%

Text book: Selected Readings and cases

Prerequisite: Permission of the instructor

Course Coverage:

1. Introduction: The Concept of Cpntrol
2. The Planning Process
3. Accounting and Control
4. Working Capital Management
5. Capital Budgeting Management
6. Divisional Performance and Performance Measurement
7. Internal and External Pricing Problems
8. Decision Making and Statistics in Control-Cost Behaviors
9. Cost Justification
10. Transfer pricing and problems
11. Research in managerial accounting
12. Conclusion

# SIMON FRASER UNIVERSITY

## MEMORANDUM

To T. Var
Department of Economic & Commerce

From Gail Tesch
Social Sciences - Library

Subject Course Proposals
Seminar in Managerial Accounting
Seminar in Financial Accounting

Date 14 June 78

Monograph Collection

We have determined the following figures which represent the number of volumes in the library, for the proposed courses.

| | | |
|---|---|---|
| Accounting | HF 5601-5689 | 1500 vols. |
| Managerial Accounting see Cost Accounting | HF 5689 C8 | 250 vols. |

Over the past several years, every effort has been made to fill gaps in the economics and commerce collection, and special attention has been given to several areas, among which are accounting and finance. The University of Western Ontario is noted for its strength in this area, and the collection at SFU, compares favourably.

Periodicals

A study completed by Mrs. Roberts in 1970, showed that the library held the most frequently mentioned titles, for example, the Canadian Journal of Economics, which was among the top fifty. The growth rate in periodical subscriptions has been equal to the funding over the past several years and the journal collection is substantial. Close scrutiny indicates that we have the major indexes, abstracting services and periodical titles.

Costs

From March 1977-March 1978, 924 titles were selected and kept from the Coutts Approval Plan. Of these titles, approximately 122 titles (Sept. 1977-June 6/78) were directly related

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to Accounting. Noting a modest increase in purchase of monographs, as stated by the department, an additional 50 titles @ $16.35 per volume would cost the library $800, and could be accommodated by a slight adjustment in the budget appropriation.

Conclusion

The library does not foresee any undue strain upon present resources, and is in a good position to support the two new course proposals.

GT:vk