

SIMON FRASER UNIVERSITY

S.83-59

MEMORANDUM

Audrey Doerr

To SENATE

From Office of the Dean of Graduate Studies

Faculty of Interdisciplinary Studies
Subject Curriculum Changes - MRM

Date June 22, 1983

Action undertaken by the Senate Committee on Graduate Studies at its meeting on June 20, 1983, gives rise to the following motions:

MOTION: That Senate approve and recommend approval to the Board of Governors, as set forth in S.83-59, the proposed changes, including:

- 1) a redistribution of the total 65 credit hours among required and elective courses, and
- ii) four new course offerings -
 - MRM 648-5 Tourism and Recreation Planning
 - MRM 670-5 Introduction to Forestry
 - MRM 671-5 Forest Ecology
 - MRM 672-5 Silviculture

Audrey Doerr
Associate Dean of Graduate Studies

mm/

SIMON FRASER UNIVERSITY

MEMORANDUM

To... Dr. John Webster
Dean of Graduate Studies
Modifications to Natural Resources
Management Program

From... *R.M. Peterson for*
Dr. J.C. Day, Director
Natural Resources Management Prog.

Date... 2 June 1983

The MRM Program Executive Committee proposes two modifications to its offerings:

- 1) a redistribution of the total 65 credit hours among required and elective courses, and
- 2) four new course offerings.

1. Rationale for redistribution of credit hours

As shown on the attached "old" and "new" versions of our section in the 1983/84 SFU Calendar, we propose to reduce the number of credit hours in the "Required Courses" list by 5 credits (1 course), accompanied by an increase of 5 credits prescribed for the "Elective Courses." The total credit hours prescribed for the program (65) remains the same. MRM 646 (Environmental and Social Impact Assessment) has been removed from the required list and added to the electives list. In addition, instead of all students taking MRM 612 as a "Required Course", they now have the option of taking one of three quantitative courses, MRM 612, MRM 643 or MRM 651. These modifications increase flexibility for students to acquire more training in their specific area of interest, while maintaining the same overall program load.

2. Rationale for new courses

MRM 648-5 Tourism and Recreation Planning

Tourism is becoming a more important part of the Gross Provincial Product and there is a need to integrate tourism and recreation development with other resource uses. This course compliments other MRM courses and fills a gap in the current elective courses in the Regional Resource Planning stream.

MRM Forestry Courses

Forestry is a major resource industry in British Columbia and the three proposed courses begin to fill a gap in current offerings in this area. Neil Hendrickson, the new faculty member in MRM, was specifically hired last year to develop forestry offerings. These new courses are:

- MRM 670-5 Introduction to Forestry
- MRM 671-5 Forest Ecology
- MRM 672-5 Silviculture

/vjd

Attach.

approved by F.I.D.s. Grad. & com.
S. V. K. [signature]
Approved by Senate Committee
on Graduate Studies - Audrey [signature] 2 June 1983
20 June 1983

KINES 840-3 Gross Body Mechanics

To study in depth the selected aspects of the application and relevance of Newtonian mechanics to human gross bodily movement. Emphasis will be in terms of quantitative measurement of forces produced in human movement and their accuracy in both prediction and modification of human activity.

KINES 850-3 Selected Topics in Mammalian Bioenergetics

A study of selected aspects of the energetics of human function, from the thermodynamics of digestive absorption or cardio-vascular function to the energy metabolism of muscle or brain.

KINES 861-3 Control Mechanisms in Human Physiology

An intensive study of human neuro-muscular control and neuro-endocrine control phenomena.

Prerequisites: KIN. 305, 306 and 407.

KINES 865-3 Neural Control of Movement

The elaboration of cybernetic models for skill performance which includes information processing, statistical decision-making and control components. There will be emphasis on the functional factors in the central nervous system which limit skilled performance.

KINES 870-3 Human Systems Modelling

Systems analysis will be applied to a variety of physiological problems. Quantitative tools will be developed and computer simulation will be introduced.

KINES 875-3 Histo-Physiology

Histo-physiology, biochemical cytology and fine structural studies of mammalian tissue with emphasis on human organ system. The course will comprise and research projects where cytochemical and fine structural techniques can be adopted to investigate the project.

Prerequisites: KIN. 336 or equivalent.

KINES 880-3 Internal Biomechanics

To relate the laws of mechanics to the function and structure of tissues and systems of the human body. Emphasis will be in relation to internal events occurring in normal and abnormal human states.

Prerequisites: KIN. 402.

KINES 885-3 Seminar on Man-Machine Systems

A study of the principles involved in integrating human capabilities into complex machine systems.

KINES 890-3 Engineering Aspects of Human Function

The application of engineering principles to the study of normal and abnormal human function.

KINES 898 M.Sc. (Kinesiology) Thesis

KINES 899 Ph.D. Dissertation

MASTER OF NATURAL RESOURCES MANAGEMENT

Location: Room 9103 - Classroom Complex
Telephone: 291-4859/291-4780
Director and Professor: J. Chadwick Day, B.Sc., M.Sc. (W. Ont.), Ph.D. (Chic.).

Associate Professor

Randall M. Peterman B.Sc. (Calif.), Ph.D. (Br. Col.)

Lecturer (Part-time)

Ann Rounthwaite B.A. (Tor.), LL.B. (York)

Faculty and Areas of Research

For full listing of the degrees of the following faculty members who have joint appointments with the departments noted, please see the listings for the respective departments and faculties in the earlier sections of this Calendar.

Mary L. Barker Resource policy, water resource management, tourism, and subalpine land management. (Geography)
J. Chadwick Day Resources management policy, water resources, policy evaluation. (Geography)
Thomas J. Gunton Regional resource planning and development planning. (Geography)
Christopher D. Hall Price theory, innovation, regulation. (Economics)
Neil Hendrickson Forest ecology and silviculture.

Randall M. Peterman

Arthur Roberts

Michael C. Roberts

Ann Rounthwaite

Fisheries population, dynamics and management, simulation modelling, environmental assessment.

Remote sensing, paleoenvironments, historical resource management. (Geography)

Hydrology of drainage basins, fluvial geomorphology. (Geography)

Environmental and resource law. (Barrister and Solicitor.)

Associated Faculty:

Brian R. Alspach (Mathematics)
J.H. Borden (Biological Sciences)
R.C. Brooke (Biological Sciences)
P. Copes (Economics)
Audrey Doerr (Political Science)
Noel Dyck (Sociology/Anthropology)
Glen H. Geen (Biological Sciences)
Edward M. Gibson (Geography)
Alton Harestad (Biological Sciences)
R.B. Horsfall (Geography)
Jack L. Knetsch (Economics)
R.W. Mathewes (Biological Sciences)
W. Basil McDermott (Interdisciplinary Studies)
John Richards (Business Administration)
R. Routledge (Mathematics)
James Wilson (Geography)

Adjunct Professors

Desmond Connor B.S. (Tor.), Ph.D. (Cornell), Principal, Connor Development Services Limited (Public participation, social impact assessment, organization management)
Gerhard H. Eisbacher Ph.D. (Innsbruck), Ph.D. (Prin.), Research scientist, Geological Survey of Canada (Regional geological studies, slope stability problems)
Bob Langford B.Sc.A. (Guelph), M.Sc. (Tor.), Ph.D. (Oregon), Coordinator, Ministry of Environment, Government of British Columbia (Impact assessment, surveillance and monitoring)
Gary Leitch B.A., M.Sc. (Queen's), Coordinator, Community Liaison & Social Impact Assessment Petro-Canada (Social impact assessment)
William G. MacLeod B.A. (Reed), LL.B. (Br. Col.), Canadian Indemnity Company (Environmental and resource law)
David W.I. Marshall B.Sc. (Qu.), Regional Director, Pacific Region Federal Environmental Assessment Review Office (Environmental Assessment)
Tim Newton B.Sc. (Cape T.), M.A. (Oxf.), Manager, Energy Services Division, B.C. Hydro (Economics energy conservation; energy use and policy)
Denis O'Gorman B.A. (Alta.), M.Sc. (Br. Col.), Dir., Project Analysis Div., Energy Branch, Min. of Energy, Min. & Petroleum Resources (Regional resource planning)
Jonathan O'Riordan B.A. (Edin.), M.A., Ph.D. (Br. Col.), Dir., Planning Branch, Assessment & Planning Div. Min. of Environment (Regional resource planning)
Jonathan Spector B.Sc. (Br. Col.), M.Sc. (Utah State), Manager Evaluation Section, Assessment Br., Assessment & Planning Division, Ministry of Environment (Coastal zone management impact assessment)
O.R. Travers B.Sc. (Br. Col.), M.F. (Oregon), Senior Coordinator, Forestry, Environment and Land Use Committee Secretariat, Ministry of the Environment, Govt. of B.C. (Regional resource planning)

This is a professional program designed for individuals with experience in private organizations or public agencies dealing with resource and for recent graduates in various disciplines related to natural resources management. From time to time courses are scheduled in the evening to permit students to complete the program on a part-time basis.

The program is intended for individuals with undergraduate training and experience in fields such as biology, economics, engineering, forestry, geography, geology, or planning. Students take an integrated sequence of courses from complementary fields. The aim is to develop an increased familiarity and competence in understanding selected aspects of the resources base, strategies and techniques of natural resources management, and the biological, social, and economic implications of resource decisions.

Admission

Refer to the *General Regulations* page 211 for admission requirements.

Those with degree qualifications not directly in the related fields but with extensive work experience in or related to resource management, are encouraged to apply for admission.

Individuals will vary in their preparation for the various disciplines involved in the degree program. Therefore, admission to the program might be conditional upon the completion of certain undergraduate courses.

**DELETE THIS OLD VERSION AND ADD
ATTACHED NEW
VERSION**

DEGREE REQUIREMENTS

At least 65 credit hours are prescribed for the program, 45 of which are from the required group of courses and 20 are from the electives. A further 10 credit hours from the required group must be completed by students whose overall academic background is deficient. Normally, students may be permitted formal transfer credit for 10 hours of the basic 65 credit-hour program for courses taken elsewhere.

Under these regulations, a student with previous graduate-level training in appropriate areas, and with a suitable undergraduate background, could normally complete the MRM. Program requirements with a minimum of 45 credit hours of work at Simon Fraser University. The program of studies for each student must be approved by the Director.

PREREQUISITE COURSES

All students must complete or have completed two undergraduate courses or their equivalents:

- Geomorphology
- Parametric and Nonparametric Statistics

REQUIRED COURSES

(At least 45 hours of these courses must be completed. Depending on overall academic background, a further 10 hours may be required.)

- | | | |
|------|--------|---|
| MRM. | 601-5 | Natural Resources Management I: Theory and Practice |
| | 602-5 | Natural Resources Management II: Advanced Seminar |
| | 611-5 | Population and Community Ecology |
| | 612-5 | Management Models of Biological Resources |
| | 621-5 | Economics of Natural Resources |
| | 631-5 | Hydrology and Geomorphology of Drainage Basins |
| | 641-5 | Law and Resources |
| | 642-5 | Regional Resource Planning |
| | 646-5 | Environmental and Social Impact Assessment |
| | 699-10 | Research Project |

ELECTIVE COURSES

Fisheries Management

- | | | |
|------|-------|--|
| MRM. | 613-5 | Current Topics in Fisheries Management |
| | 643-5 | Quantitative Analysis in Resource Management |
| BISC | 814-3 | Aquatic Ecology |
| ECON | 863-4 | Fisheries Economics |
| | 864-4 | Studies in Economic Fisheries Management |

Regional Resource Planning

- | | | |
|------|-------|---|
| MRM. | 632-5 | Terrain Evaluation |
| | 633-5 | Introduction to Remote Sensing and Aerial Photographic Interpretation |
| | 634-5 | Slope Stability and Snow Avalanches in Resource Management |
| | 644-5 | Public Policy Analysis |
| | 645-5 | Resource Development Communities |
| | 647-5 | Regional Planning II |
| | 650-5 | Energy Uses and Policy |
| | 651-5 | Project Evaluation |

Business Administration

- | | | |
|------|--------|----------------------------------|
| MBA. | *603-5 | Organization and Management |
| | *632-5 | Operations Research |
| | *689-5 | Special Topics in Human Behavior |
| | *691-5 | Business and Society |

Additional Courses

- | | | |
|------|-------|---|
| MRM. | 660-5 | Special Topics in Resources Management |
| | 661-5 | Special Topics in Resources Management |
| | 662-5 | Special Topics in Resources Management |
| BISC | 816-5 | Biology and Management of Forest Insects |
| | 850-3 | Weed Biology and Control |
| | 859-3 | Limnological Consequences of Resource Use and Pollution |

*May be taken with permission of the Director MBA program.

MASTER OF NATURAL RESOURCES MANAGEMENT COURSES (MRM.)

MRM. 601-5 Natural Resources Management I: Theory and Practice
Disciplinary and interdisciplinary theory and principles for natural resources analysis and planning.

MRM. 602-5 Natural Resources Management II: Advanced Seminar
A review of selected policies, programs and problems related to natural resources management; review and evaluation of student research.

MRM. 611-5 Population and Community Ecology
A review of population, community, and ecosystem ecology; implications of these areas for methods of resource management and environmental assessment.

MRM. 612-5 Management Models of Biological Resources
Methods of constructing simulation models and their uses in resource management and decision making. Case studies of environmental modelling with emphasis on biological resources.

MRM. 613-5 Current Topics in Fisheries Management
Current methods of evaluation of fisheries management problems, with emphasis on the biological aspects; case studies of world fisheries.
Prerequisites: MRM. 611 and 612 or permission of the Instructor.

MRM. 621-5 Economic of Natural Resources
Application of economic theory to natural resources management problems, with a view to assessing existing and alternative policies. Topics include benefit-cost analysis, economics of preservation, pricing of natural resource services, alternative pollution-control strategies, and fisheries management.

MRM. 631-5 Hydrology and Geomorphology of Drainage Basins
The morphology and evolution of drainage basins; analysis of surface and sub-surface flow in the drainage basin; stream-hillslope erosion and sedimentation.

MRM. 632-5 Terrain Evaluation
The extensive classification of a landscape based on geology, geomorphology, soils, vegetation, historic and current land use, and the assessment of qualitative values as an aid to multiple land use management.

MRM. 633-5 Introduction to Remote Sensing and Aerial Photographic Interpretation

The application of these techniques in the acquisition and display of selected resource data. Topics include air photo interpretation, multi-band photography, thermal infrared imagery, satellite imagery, orthophotography, topographic and thematic mapping, and computer cartography.

MRM. 634-5 Slope Stability and Snow Avalanches in Resource Management

Impact of slope failure and snow avalanches in mountainous environments. Technical counter measures, zoning techniques, and the appraisal of acceptable risk are discussed within different geologic, climatic, and socioeconomic contexts.

MRM. 641-5 Law and Resources
Advanced study of legal interventions related to resource planning and environmental control. Topics considered include planning law, law of pollution control, legal aspects of land management, property rights, resource taxation, and problem of managing common pool resources.

MRM. 642-5 Regional Planning I

Theory and techniques of regional analysis; planning models and their application to key resource sectors.

MRM. 643-5 Quantitative Analysis in Resource Management

The use of statistical techniques and mathematical models in resource management with special emphasis on experimentation, survey techniques, and statistical model construction.

MRM. 644-5 Public Policy Analysis

A theoretical analysis of alternative policy approaches to major issues facing society. A practical analysis of the structures and processes surrounding major contemporary policy issues and an examination of the nature and substance of those policy issues. Particular emphasis will be placed on resource management issues.

MRM. 645-5 Resource Development Communities

Examination of the impact of resource developments on communities in Canada. The course presents an overview of the social organization of resources-based communities and an analysis of the participatory process in decision making in resource management.

MRM. 646-5 Environmental and Social Impact Assessment

Evaluation and application of current methodologies for social, economic, and biophysical impact assessment.

MRM. 647-5 Regional Planning II

A regional planning workshop involving the application of theories and techniques from the Regional Planning I course. The nature and typical

problems of rural areas, their people, their governmental processes and powers.

MRM. 650-5 Energy Use and Policies

An historical perspective of energy use and future prospects for fossil fuels, hydroelectricity, geothermal, nuclear, solar, wind, and other sources; factors affecting energy demand.

MRM. 651-5 Project Evaluation

The course will examine the role, limitations and methods of benefit cost analysis. Different measurement techniques will be applied to the estimation of a range of benefits and costs. Market and non-market allocations will be considered.

MRM. 660-5 Special Topics in Natural Resources Management

Special topics in areas not currently offered within the offerings of the MRM. Program.

MRM. 661-5 Special Topics in Resources Management

Special topics in areas not currently offered within the offerings of the MRM. Program.

MRM. 662-5 Special Topics in Resources Management

Special topics in areas not currently offered within the offerings of the MRM. Program.

MRM. 699-10 Research Project

A research project dealing with a specific problem in resource administration or allocation, resulting in the preparation of a formal paper and an oral defense.

DEGREE REQUIREMENTS

At least 65 credit hours are prescribed for the program, 40 of which are from the required group of courses and 25 are from the electives. A further 10 credit hours from the required group must be completed by students whose overall academic background is deficient. Normally, students may be permitted formal transfer credit for 10 hours of the basic 65 credit-hour program for courses taken elsewhere.

Under these regulations, a student with previous graduate-level training in appropriate areas, and with a suitable undergraduate background, could normally complete the MRM Program requirements with a minimum of 45 credit hours of work at Simon Fraser University. The program of studies for each student must be approved by the director.

PREREQUISITE COURSES

All students must be familiar with the material covered in 2 undergraduate courses or their equivalents:

Geomorphology
Parametric and Nonparametric Statistics

A field camp is held each September for new MRM students during the week before classes begin. This provides an opportunity for students and faculty to get acquainted and a first-hand introduction to a variety of management conflicts and problems in British Columbia.

REQUIRED COURSES

MRM 601-5 Natural Resources Management I: Theory and Practice
MRM 602-5 Natural Resources Management II: Advanced Seminar
MRM 611-5 Applied Population and Community Ecology
MRM 621-5 Economics of Natural Resources
MRM 631-5 Applied Geomorphology and Hydrology
MRM 641-5 Law and Resources
MRM 642-5 Regional Planning I
MRM 699-10 Research Project

And at least one of:

MRM 612-5 Management Models of Biological Resources
MRM 643-5 Quantitative Analysis in Resource Management
MRM 651-5 Project Evaluation

ELECTIVE COURSES**

Students normally select 25 credit hours (usually 5 courses) to strengthen an area of expertise. A series of possible electives are shown below under each of the four areas of specialization currently offered by the Natural Resources Management Program. However any combination of elective courses may be taken.

Fisheries Management

- MRM 612-5 Management Models of Biological Resources
- MRM 613-5 Current Topics in Fisheries Management
- MRM 643-5 Quantitative Analysis in Resource Management
- MRM 651-5 Project Evaluation
- BISC 814-3 Aquatic Ecology
- ECON 863-4 Fisheries Economics
- ECON 864-4 Studies in Economic Fisheries Management

Regional Resource Planning

- MRM 632-5 Terrain Evaluation
- MRM 633-5 Introduction to Remote Sensing and Aerial Photographic Interpretation
- MRM 634-5 Slope Stability and Snow Avalanches in Resource Management
- MRM 644-5 Public Policy Analysis
- MRM 645-5 Resource Development Communities
- MRM 646-5 Environmental and Social Impact Assessment
- MRM 647-5 Regional Planning II
- MRM 648-5 Tourism and Recreation Planning
- MRM 650-5 Energy Uses and Policy
- MRM 651-5 Project Evaluation

Business Administration

- MBA 603-5* Organization and Management
- MBA 632-5* Operations Research
- MBA 689-5* Special Topics in Human Behavior
- MBA 691-5* Business and Society

Forestry

- MRM 670-5 Introduction to Forestry
- MRM 671-5 Forest Ecology
- MRM 672-5 Silviculture

** Other courses may be substituted with the approval of the director.

* May be taken with permission of the MBA director.

SIMON FRASER UNIVERSITY LIBRARY COLLECTION EVALUATION

(To be completed only for new course proposals; not needed for re-numbering)

Course number and name TOURISM & RECREATION PLANNING MRM 648

1. Evaluation of current library collection (indicate method used, as applicable):

I investigated the library holdings under a number of different LC subject headings, Tourist Trade, Leisure, Outdoor Recreation, etc. Our holdings appear to be adequate. I discussed the requirements for this course with Mary Barker and can see no problems with library support. Our journal collection is more than adequate.

2. Recommended additions to collection (monographs, serials, other); attach supplementary lists as necessary:

From discussion with Mary Barker, a few monographs would be required.

CHUBB, M. & H.R. CHUBB. One Third of our Time. N.Y., Wiley, 1981.

WALL, G. & J.S. Marsh. Recreational Land Use: Perspective on its Evolution
Canada. Ottawa: Carleton U.P., 1982.

SMITH, S.L.J. Recreation Geography. London: Croom Helm, 1983.

3. Estimated costs:

A. Initial costs

monographs	\$ 150.00
serials	

Total	\$ 150.00
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B. Continuing costs

None that can be specifically attached to this course, although we shall continue to purchase material in this area.

monographs	
serials	
Total	

4. Special budget and scheduling factors (include special processing, equipment, and servicing costs):

None

5. Other pertinent details:

None

Jack Corse
For Library Jack Corse
Date: June 2 / 1983

Randall M. Pitteman / for J.C. Day
For Faculty Department
Date: 2 June 1983

New Graduate Course Proposal FormCALENDAR INFORMATION:

Department: Natural Resources Management Program Course Number: MRM 648
 Title: Tourism and Recreation Planning
 Description: Evaluation and application of tourism and recreation planning models;
regional and international case studies of the biophysical, economic, and social
impacts of tourism.
 Credit Hours: five (5) Vector: 3-2-0 Prerequisite(s) if any: MRM 601
or permission of instructor

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 7 - 10 When will the course first be offered: 83-3
 How often will the course be offered: At least once every two years.

JUSTIFICATION:

This course will fill a gap in current MRM course offerings by dealing with tourism
growth and impacts in a variety of Canadian and international settings. Advanced
methodologies for evaluating management alternatives will be reviewed.

RESOURCES:

Which Faculty member will normally teach the course: M.L. Barker; J.L. Knetsch (participant)

What are the budgetary implications of mounting the course: An additional \$400.00 for
field trips.

Are there sufficient Library resources (append details): Requires limited acquisition of
recent texts and government documents.

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: 25 May 1983
 Faculty Graduate Studies Committee: [Signature] Date: 26 May 1983
 Faculty: _____ Date: _____
 Senate Graduate Studies Committee: [Signature] Date: June 20/83
 Senate: _____ Date: _____

APPENDIX A

Course Outline

TOURISM AND RECREATION PLANNING

Brief review of factors underlying the changing pattern of tourism and recreation at regional, national, and international scales; forecasting tourism and recreation demand. Case studies of tourism development processes and problems in a variety of cultural settings. Attention will focus on tourism development policies and planning strategies in response to economic, social, and biophysical impacts. The need to integrate the provision of outdoor recreation opportunities and tourism planning in regional settings such as western Canada will be underlined.

APPENDIX B

Course Instructor

The course will be taught by Dr. Mary L. Barker (Geography/IRM) who has research experience in tourism and recreation planning in western Canada, the Alps, and Latin America. She has published articles on recreation development and tourism planning in British Columbia, the Alps, and Peru.

Professor Jack Knetsch (Economics), an international authority on recreation economics, has expressed an interest in contributing lectures to the course.

APPENDIX C

Library Resources

The library collection meets the basic requirements of the course but it will be necessary to acquire some of the most recent texts and government documents.

Chubb, M. and H.R. Chubb. 1981. One Third of Our Time. New York: Wiley.

Clawson, M. and J.L. Knetsch. 1966. Economics of Outdoor Recreation. Baltimore: Johns Hopkins University Press.

deKadt, E. 1979. Tourism: Passport to Development? New York: Oxford University Press.

Hendee, J.C., G.H. Stankey and R.C. Lucas. 1977. Wilderness Management. U.S. Department of Agriculture, Forest Service, Misc. Pub. No. 1365.

Krutilla, J.V. and A.C. Fisher. 1975. The Economics of Natural Environments. Baltimore: Johns Hopkins University Press.

Mathieson, A. and G. Wall. 1982. Tourism: Economic, Physical and Social Impacts. London: Longman.

OECD. 1980. The Impact of Tourism on the Environment. Paris.

Pearce, D. 1981. Tourist Development. London: Longman.

Pigram, J. 1983. Outdoor Recreation and Resource Management. London: Croom Helm.

Smith, S.L.J. 1983. Recreation Geography. London: Longman.

Wall, G. and J.S. Marsh. 1982. Recreational Land Use: Perspectives on its Evolution in Canada. Ottawa: Carleton University Press.

Selected B.C. Government Documents

Canada - British Columbia TIDSA publications, including:

Canada-B.C. TIDSA Agreement

B.C. Tourism Development Strategy

B.C. Tourism Development Strategy, Phase II (1979)

Regional Tourism Strategies (1982):

Southwestern B.C.

Vancouver Island

Cariboo-Chilcotin

Okanagan-Similkameen

Rocky Mountains

Relevant Journals in SFU Collections

Annals of Tourism Research
Journal of Leisure Research
Recreation Canada
Journal of Environmental Management
Environmental Impact Assessment Review
Canadian Geographer
Geographical Review
Alternatives
Revue de Géographie Alpine
Geographische Rundschau
Geographica Helvetica
Land Economics
American Economic Review
Quarterly Journal of Economics
Journal of American Institute of Planners
Plan (Canada)
Science

SIMON FRASER UNIVERSITY

MEMORANDUM

To.....	Neil Hendrickson.....	From.....	Maurice Deutsch.....
	Natural Resources Management Program		Library - Sciences.....
Subject.....	Proposed New Graduate Courses	Date.....	83/06/02.....

The Library requires additional funding to provide support for three new graduate courses (listed below) proposed by the Natural Resources Management Program. These courses deal with forestry, forest resources and ecology, tree culture and farming, and forest practices and management. Approximately \$2500 is recommended for the purchase of books and monographs, conference proceedings, and periodicals in the above and related areas. More highly specialized technical and research reports and government publications may be borrowed from UBC (and elsewhere) via SFU's Interlibrary Loans facility.

MRM 670	Introduction to Forestry (5 credit hrs.)
MRM 671	Forest Ecology (5 credit hrs.)
MRM 672	Silviculture (5 credit hrs.)

Library material listed in Appendix C of each New Graduate Course Proposal Form is available at SFU.

Randall M. Peterman
for J.C. DAY

ah

2 June 1983

SIMON FRASER UNIVERSITY
New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Natural Resources Management Program Course Number: MRM 670
Title: Introduction to Forestry
Description: Principles of forestry practice, focusing on analysis of economic, social,
and ecological impacts, and with particular reference to British Columbia.
Credit Hours: five (5) Vector: 3-2-0 Prerequisite(s) if any: None

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 10 When will the course first be offered: Fall 1983
How often will the course be offered: Once every year.

JUSTIFICATION:

Fills need for an MRM Course addressing the Forest Resource and issues surrounding
it, both locally and globally.

RESOURCES:

Which Faculty member will normally teach the course: Neil Hendrickson
What are the budgetary implications of mounting the course: An additional \$400.00 for
field travel.

Are there sufficient Library resources (append details): may require limited acquisition of
texts, govt. publications and related
materials, and use of UBC forestry
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: J.C. Day

Date: 26 Mar 1983

Faculty Graduate Studies Committee: Sr. V. L. Smith

Date: 25 Mar 1983

Faculty: _____

Date: _____

Senate Graduate Studies Committee: Gudrey Davis

Date: June 20/83

Senate: _____

Date: _____

APPENDIX A

COURSE OUTLINE

INTRODUCTION TO FORESTRY

Introduction to the principles of forestry practice, and their application. Review of the role of forestry on global and local scales. Discussion of problems and conflicts in aspects of forestry practice. Evaluation of the economic, social, and ecological impacts of forestry in British Columbia in particular with consideration of future needs.

APPENDIX B

Course Instructor

This course will be taught by Neil Hendrickson (MRM), whose experience and degrees are in forestry (BS), forest resources/silviculture (MS), and forest ecology/silviculture (Ph.D. candidate).

Guest lecturers from government and industry will contribute occasional lectures to the introduction to forestry course. Personnel from the B.C. Ministry of Forests may assist in field trips, and the staff of the UBC Research Forest has offered assistance in conducting field trips to the UBC Research Forest.

APPENDIX C

Library Resources

- Allen, S.W., and G.W. Sharpe. 1960. An introduction to American forestry. Third edition. McGraw-Hill, Toronto. 466 pp.
- Armson, K.A. 1977. Forest Soils: their properties and relation to silviculture. Ronald Press, New York.
- Assmann, E. 1970. The principles of forest yield study. Pergamon Press, Toronto. 506 pp.
- Avery, T.E. 1967. Forest measurements. McGraw-Hill, Toronto. 290 pp.
- Barrett, J.W., ed. 1980. Regional silviculture of the United States. Second edition. John Wiley & Sons, Toronto. 551 pp.
- Boymann, F.H., and G.E. Likens. 1979. Pattern and process in a forested ecosystem. Springer-Verlag, New York. 253 pp.
- Busgen, M., and E. Munch. 1929. The Structure and Life of Forest Trees. Chapman and Hall. London. 436 pp.
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- Cannell, M.G.R., and F.T. Last, eds. 1979. Tree physiology and yield improvement. Academic Press, Toronto.
- Clawson, M. 1975. Forests for whom and for what? John Hopkins University Press, Baltimore. 176 pp.
- Collins, B.M., and F.M. White. 1981. Elementary Forestry. Reston Co., Reston, VA. 211 pp.
- Conway, S. 1976. Logging practices: principles of timber harvesting systems. Miller Freeman. 416 pp.
- Daniel, T.W., J.A. Helms, and F.S. Baker. 1979. Principles of silviculture. Second edition. McGraw-Hill, Toronto. 500 pp.
- Davis, K.P. 1954. American Forest Management. McGraw-Hill, Toronto. 482 pp.
- Duerr, W.A., D.E. Teeguarden, N.B. Christiansen, and S. Guttenberg. 1979. Forest resource management. W.B. Saunders, Toronto. 612 pp.
- Duerr, W.A. 1960. Fundamentals of forestry economics. McGraw-Hill, Toronto. 579 pp.

- F.A.O. 1962. Forest Influences. FAO forestry and forest products studies. No. 15. 307 pp.
- Forbes, R.D., ed. 1961. Forestry handbook. Ronald Press, New York.
- Gould, E. 1975. Logging; British Columbia's logging history. Hancock House, Saanichton, B.C. 224 pp.
- Hayden-Guest, S., J.K. Wright, and E.M. Teclaff. 1956. A world geography of forest resources. Ronald Press, New York. 736 pp.
- Hermann, R.K., and D.P. Lavender, eds. 1972. Even-age management. Paper 848. Oregon State University. 250 pp.
- Hewett, C.E., and T.E. Hamilton, eds. 1982. Forests in demand - conflicts and solutions. Auburn House, Boston. 265 pp.
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- Kostler, J. 1956. Silviculture. Oliver and Boyd, London. 416 pp.
- Kittredge, J. 1948. Forest influences - the effect of woody vegetation on climate, water, and soil, with applications to the conservation of water and the control of floods and erosion. McGraw-Hill. Toronto. 394 pp.
- Kozlowski, T.T. and C.E. Ahlgren, eds. 1974. Fire and ecosystems. Academic Press, Toronto. 542 pp.
- Kozlowski, T.T. 1979. Tree growth and environmental stresses. University Washington Press. 192 pp.
- Kozlowski, T.T., ed. 1981. Water deficits and plant growth. Vo. VI. Woody plant communities. Academic Press, Toronto.
- Krajina, V.J. 1965. Biogeoclimatic zones and bioecoceneses of British Columbia. UBC Faculty of Forestry. 131 pp.
- Krajina, V.J. 1969. Ecology of forest trees of British Columbia. Ecology Western North America 2: 1-146.
- Krajina, V.J., K. Klinka, and J. Worrall. 1982. Distribution and ecological characteristics of trees and shrubs of British Columbia. UBC Faculty of Forestry. 131 pp.
- Kramer, P.J., and T.T. Kozlowski. 1979. Physiology of woody plants. Academic Press, Toronto.
- Lee, R. 1978. Forest microclimatology. Columbia University Press, New York. 276 pp.
- Likens, G.E., F.H. Bormann, R.S. Pierce, J.S. Eaton, and N.S. Johnson. 1977. Biogeochemistry of a forested ecosystem. Springer-Verlag, New York. 146 pp.

- Means, J.E., ed. 1982. Forest succession and stand development research in the northwest. Proceedings of the symposium held 26 March 1981. Forest research lab., Oregon State University, Corvallis. 170 pp.
- Reichle, D.E. ed. 1970. Analysis of temperate forest ecosystems. Ann Arbor Science, Mich. 167 pp.
- Rowe, J.S. 1972. Forest regions of Canada. Department of the environment. Canadian Forest Service, Publication No. 1300. Information Canada, Ottawa.
- Smith, D.M. 1962. The practice of silviculture. Seventh edition. John Wiley & Sons, Toronto. 578 pp.
- Smith, W.H. 1981. Air pollution and forests. Springer-Verlag, New York. 379 pp.
- Society of American Foresters. 1981. Choices in silviculture for American forests. Society of American Forests, Washington, D.C. 80 pp.
- Spurr, S.H., and B.V. Barnes. 1980. Forest ecology. Third edition. John Wiley & Sons, Toronto. 687 pp.
- Stern, Klaus, and Laurence Rocke. 1974. Genetics of forest ecosystems. Springer-Verlag, New York.
- Stoddard, C.H. 1978. Essentials of forestry practice. Third edition. John Wiley & Sons, Toronto. 387 pp.
- Troup, R.S. 1966. Silvicultural systems. Second edition. Clarendon Press, Oxford. 216 pp.
- U.S. Forest Service. 1979. Silvicultural systems for the major forest types of the United States. USDA Forest Service Agriculture handbook. 445. 114 pp.
- USDA Forest Service. 1978. Uneven-aged silviculture and management in the United States. Timber Management Research, Forest Service, Washington, D.C. 234 pp.
- Waring, R.H., ed. 1979. Forests: fresh perspectives from ecosystem analysis. Proceedings of the 40th Annual Biol. Colloq. Oregon State University Press. 199 pp.
- West, D.C., H.H. Shugart, and D.B. Botkin, eds. 1981. Forest succession, concepts and applications. 517 pp.
- Wilde, S.A. 1958. Forest soils: their properties and relation to silviculture. Ronald Press, New York.
- Williams, M.R.W. 1981. Decision-making in forest management. Research Studies Press, Toronto. 143 pp.

Wilson, B.F. 1970. The growing tree. University of Massachusetts Press. 152 pp.

Wright, J.W. 1976. Introduction to forest genetics. Academic Press, Toronto.

Young, R.A. ed. 1982. Introduction to forest science. John Wiley & Sons, Toronto. 554 pp.

Journals which may contain papers on various aspects of forestry.

Journal of Forestry

Forest Science

Forest Ecology and Management

International Review of Forestry Research

Canadian Journal of Forestry Research

Forestry Chronicle

Forestalk

Publications from

B.C. Ministry of Forests

Canadian Forest Service

U.S. Forest Service

SIMON FRASER UNIVERSITY

MEMORANDUM

To	Neil Hendrickson	From	Maurice Deutsch
	Natural Resources Management Program		Library - Sciences
Subject	Proposed New Graduate Courses	Date	83/06/02

The Library requires additional funding to provide support for three new graduate courses (listed below) proposed by the Natural Resources Management Program. These courses deal with forestry, forest resources and ecology, tree culture and farming, and forest practices and management. Approximately \$2500 is recommended for the purchase of books and monographs, conference proceedings, and periodicals in the above and related areas. More highly specialized technical and research reports and government publications may be borrowed from UBC (and elsewhere) via SFU's Interlibrary Loans facility.

MRM 670	Introduction to Forestry (5 credit hrs.)
MRM 671	Forest Ecology (5 credit hrs.)
MRM 672	Silviculture (5 credit hrs.)

Library material listed in Appendix C of each New Graduate Course Proposal Form is available at SFU.

ah

Randall M. Peterman
for J.C. DAY

2 June 1983

SIMON FRASER UNIVERSITY
New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Natural Resources Management Program Course Number: 671
Title: Forest Ecology
Description: Principles of Ecology of Trees and Forests, applied to evaluation and
management of forest ecosystems.
Credit Hours: five (5) Vector: 3-2-0 Prerequisite(s) if any: None

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 10 When will the course first be offered: Fall 1983
How often will the course be offered: Once every year.

JUSTIFICATION:

Provides basis for understanding forest ecosystems and their management - a necessity
for dealing with the forest resource from any perspective.

RESOURCES:

Which Faculty member will normally teach the course: Neil Hendrickson
What are the budgetary implications of mounting the course: An additional \$400 for
field travel.

Are there sufficient Library resources (append details): may require limited acquisition of
texts, govt. publications and related
materials, and use of UBC forestry
Appended: a) Outline of the Course library.
b) An indication of the competence of the Faculty member to give the course.
c) Library resources

Approved: Departmental Graduate Studies Committee: J. C. Day ^{Paul H. Paterson} Date: 26 May 1983
Faculty Graduate Studies Committee: [Signature] Date: 2 June 1983
Faculty: _____ Date: _____
Senate Graduate Studies Committee: [Signature] Date: June 20/83
Senate: _____ Date: _____

APPENDIX A

COURSE OUTLINE

Forest Ecology

Objectives

To gain an understanding of:

1. The structure, function, and development of forest ecosystems.
2. The interaction of forest vegetation and its environment.
3. The natural dynamics of forest populations.
4. The ecological basis of silvicultural practice and the implications of different types of manipulation.
5. Typical forest ecosystems of B.C. and their identification.

There will be several Saturday field trips during the term. These will involve detailed examination of different types of forest ecosystems. Their purpose is to allow students to synthesize and apply the principles presented in lectures to various and contrasting situations.

APPENDIX B

Course Instructor

This course will be taught by Neil Hendrickson (MRM), whose experience and degrees are in forestry (BS), forest resources/silviculture (MS), and forest ecology/silviculture (Ph.D. candidate).

Personnel from the B.C. Ministry of Forests may assist in field exercises in ecosystem classification, and certain field exercises may be conducted in conjunction with forest ecology faculty and classes from U.B.C.

APPENDIX C

Library Resources

General References

- Barbour, M.G., J.H. Burk, and W.D. Pitts. 1980. Terrestrial plant ecology. Benjamin/Cummings. Don Mills, Ont. 604 pp.
- Daniel, T.W., J.A. Helms, and F.S. Baker. 1979. Principles of silviculture. Second edition. McGraw-Hill, Toronto. 500 pp.
- Daubenmire, R.F. 1974. Plants and environment, a textbook of autecology. Third edition. John Wiley & Sons. Toronto. 422 pp.
- Daubenmire, R.F. 1968. Plant communities, a textbook of plant synecology. Harper & Row, N.Y. 300 pp.
- Harper, J.L. 1977. Population biology of plants. Academic Press, Toronto. 892 pp.
- Hocker, H.W., Jr. 1979. Introduction to forest biology. John Wiley & Sons, Toronto. 467 pp.
- Krebs, C.J. 1972. Ecology. The experimental analysis of distribution and abundance. Harper & Row, N.Y. 694 pp.
- McNaughton, S.J., and L.L. Wolf. 1979. General ecology. Second edition. Holt, Rhinehart and Winston, Toronto. 702 pp.
- Park, C.C. 1980. Ecology and environmental management. Butterworths, Toronto. 272 pp.
- Odum, E.P. 1971. Fundamentals of ecology. Third edition. W.B. Saunders, Toronto. 574 pp.
- Remmert, H. 1980. Ecology. Springer-Verlag, New York. 289 pp.
- Ricklefs, R.E. 1979. Ecology. Second edition. Chiron Press. New York. 966 pp.
- Smith, R.L. 1966. Ecology and field biology. Harper and Row. New York. 686 pp.
- Young, R.A., ed. 1982. Introduction to forest science. John Wiley & Sons, Toronto. 554 pp.

Selected References by Topic

1) Forests of North America and the world.

- Collinson, A.S. 1977. Introduction to world vegetation. George Allen and Unwin, London. 201 pp.
- Dansereau, P. 1957. Biogeography: an ecological perspective. Ronald Press, New York. 394 pp.
- Franklin, J.F., and C.T. Dyrness. 1973. Natural vegetation of Oregon and Washington. USDA Forest Service PNWFES. General Tech. Rep. PNW-8. 417 pp.
- Haden-Guest, S., J.K. Wright, and E.M. Teclaff, eds. 1956. A world geography of forest resources. Ronald Press, New York. 736 pp.
- Krajina, V.J. 1965. Biogeoclimatic zones and biocoenoses of British Columbia. UBC Faculty of Forestry. 131 pp.
- Krajina, V.J. 1969. Ecology of forest trees of British Columbia. Ecology Western North America 2: 1-146.
- Krajina, V.J., K. Klinka, and J. Worrall. 1982. Distribution and ecological characteristics of trees and shrubs of British Columbia. UBC Faculty of Forestry. 131 pp.
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- Walter, H. Vegetation of the earth. Heidelberg Science Library. Vol. 15. Springer-Verlag, New York. 237 pp.

2) Forest Genetics

- Stern, Klaus, and Laurence Rocke. 1974. Genetics of forest ecosystems. Springer-Verlag, New York.
- Wright, J.W. 1976. Introduction to forest genetics. Academic Press, Toronto.

3) Ecophysiology

- Busgen, M., and E. Munch. 1929. The Structure and Life of Forest Trees. Chapman and Hall. London. 436 pp.
- Cannell, M.G.R., and F.T. Last, eds. 1979. Tree physiology and yield improvement. Acad. Press, Toronto.
- Kramer, P.J., and T.T. Koylowski. 1979. Physiology of woody plants. Acad. Press, Toronto.
- Larcher, W. 1975. Physiological plant ecology. Springer-Verlag, New York. 252 pp.

Thimann, K.V., ed. 1958. The physiology of forest trees. Ronald Press, New York.

4) Form and Growth (vegetative and reproductive)

Busgen, M., and E. Munch. 1929. The structure and life of forest trees. Chapman & Hall, London. 436 pp.

Horn, H.S. 1971. Adaptive geometry of trees. Princeton University Press. 144 pp.

Koylowski, T.T. 1971. Growth and development of trees. Vol. I. Academic Press, Toronto. 443 pp.

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Panshin, A.J., and C. De Zeeuw. 1980. Textbook of wood Technology. Fourth edition. McGraw-Hill, Toronto. 722 pp.

Wilson, B.F. 1970. The growing tree. University of Massachusetts Press. 152 pp.

Zimmerman, M.H. ed. 1963. The formation of wood in forest trees. Academic Press, New York. 562 pp.

Zimmerman, M.H., and C.L. Brown. 1977. Trees: structure and function. Springer-Verlag, New York. 336 pp.

5) Forest Environment

Armson, K.A. 1977. Forest soils: their properties and relation to silviculture. Ronald Press, New York.

Bainbridge, R., G.C. Evans, and O. Rackham, eds. 1965. Light as an ecological factor. John Wiley & Sons, Toronto.

Etherington, J.R. 1975. Environment and plant ecology. John Wiley & Sons, Toronto. 347 pp.

Evans, L.T. 1963. Environmental control of plant growth. Academic Press, Toronto.

F.A.O. 1962. Forest influences. FAO forestry and forest products studies. No. 15. 307 pp.

Jenny, H. 1980. The soil resource: origin and behavior. Springer-Verlag, New York. 377 pp.

Kittredge, J. 1948. Forest influences - the effect of woody vegetation on climate, water, and soil, with applications to the conservation of water and the control of floods and erosion. McGraw-Hill. Toronto. 394 pp.

Kozlowski, T.T. and C.E. Ahlgren, eds. 1974. Fire and ecosystems. Academic Press, Toronto. 542 pp.

- Kozlowski, T.T. 1979. Tree growth and environmental stresses. University Washington Press. 192 pp.
- Kozlowski, T.T., ed. 1981. Water deficits and plant growth. Vol. VI. Woody plant communities. Academic Press, Toronto.
- Lange, O.L., L. Kappen, and E.D. Selhultye, eds. 1976. Water and plant life: problems and modern approaches. Ecological Studies 19. Springer-Verlag, New York.
- Lee, R. 1978. Forest microclimatology. Columbia University Press, New York. 276 pp.
- Likens, G.E., F.H. Bormann, R.S. Pierce, J.S. Eaton, and N.S. Johnson. 1977. Biogeochemistry of a forested ecosystem. Springer-Verlag, New York. 146 pp.
- Lowry, W.P. 1967. Weather and life. An introduction to biometeorology. Academic Press, Toronto. 347 pp.
- Mudd, J.B., and T.T. Kozlowski, eds. 1975. Responses of plants to air pollution. Academic Press, Toronto.
- Reifsnyder, W.E., and H.W. Lull. 1965. Radiant energy in relation to forests. USDA Forest Service Tech. Bull. No. 1344. 111 pp.
- Schroeder, M.J. and C.C. Buck. 1970. Fire weather. USDA Forest Service Agr. Handbook 360. 229 pp.
- Slatyer, R.O. 1967. Plant-water relationships. Academic Press, Toronto. 366 pp.
- Smith, W.H. 1981. Air pollution and forests: interactions between air contaminants and forest ecosystems. Springer-Verlag, New York. 379 pp.
- Treshow, M. 1970. Environment and plant response. McGraw-Hill, Toronto. 422 pp.
- USDA Forest Service. 1981. Fire regimes and ecosystem properties. Proceedings of the conference. General Tech. Rep. WO-26.
- Wilde, S.A. 1958. Forest soils: their properties and relation to silviculture. Ronald Press, New York.

6) Forest Dynamics

- Bormann, F.H., and G.E. Likens. 1979. Pattern and process in a forested ecosystem. Springer-Verlag, New York. 253 pp.
- Golley, F.B., ed. 1977. Ecological succession. Benchmark papers in ecology 5. Dowden, Hutchinson and Ross. Stroudsburg, Pa. 373 pp.

Means, J.E., ed. 1982. Forest succession and stand development research in the northwest. Proceedings of the symposium held 26 March 1981. Forest research Lab., Oregon State University, Corvallis. 170 pp.

West, D.C. H.H. Shugart, and D.B. Botkin, eds. 1981. Forest succession: concepts and applications. Springer-Verlag, New York. 517 pp.

7) Forest Communities

Christiansen, F.B., and Fenchel, T.M. 1977. Theories of populations in biological communities. Ecol. Studies 20. Springer-Verlag, New York. 144 pp.

Cody, M.L. and J.M. Diamond, eds. 1975. Ecology and evolution of communities. Belknap Press. Cambridge, Mass. 545 pp.

Hutchinson, G.E. 1978. An introduction to population ecology. Yale University Press. 260 pp.

Whittaker, R.H. 1975. Communities and ecosystems. Second edition. MacMillan, New York. 385 pp.

8) Ecosystems Analysis

Anon. 1974. Structure, function and management of ecosystems. Proceedings of the first international congress of ecology. The Hague, Netherlands. Centre for agricultural publishing and documentation. Wageningen. 414 pp.

Cairns, J., Jr., ed. 1980. The recovery process in damaged ecosystems. Ann Arbor Science, Mich. 167 pp.

Reichle, D.E. ed. 1970. Analysis of temperate forest ecosystems. Ecological Studies I. Springer-Verlag, New York. 304 pp.

Van Dyne, G.M. ed. 1969. The ecosystem concept in natural resource management. Academic Press, Toronto. 383 pp.

Waring, R.H., ed. 1979. Forests: fresh perspectives from ecosystem analysis. Proc. of the 40th Annual Biol. Colloq. Oregon State University Press. 199 pp.

Wiens, J.A., ed. 1972. Ecosystem structure and function. Proceedings of the 31st Annual Biology Colloquium. Oregon State University Press. 176 pp.

Journals which may contain papers on various aspects of
forest ecology.

Ecology
Ecological Monographs
Journal of Ecology
Journal of Forestry
Forest Science
Forest Ecology and Management
Annual Review of Ecology and Systematics
Advances in Ecological Research
International Review of Forestry Research
Canadian Journal of Forestry Research
Forestry Chronicle
Silvae Genetica
Nature
Science
Bioscience
Ambio
The American Naturalist
Oikos
Oecologia
Vegetatio

Plus - Publications from:

B.C. Ministry of Forests
Canadian Forestry Service
U.S. Forest Service

SIMON FRASER UNIVERSITY

MEMORANDUM

To	Neil Hendrickson	From	Maurice Deutsch
	Natural Resources Management Program		Library - Sciences
Subject	Proposed New Graduate Courses	Date	83/06/02

The Library requires additional funding to provide support for three new graduate courses (listed below) proposed by the Natural Resources Management Program. These courses deal with forestry, forest resources and ecology, tree culture and farming, and forest practices and management. Approximately \$2500 is recommended for the purchase of books and monographs, conference proceedings, and periodicals in the above and related areas. More highly specialized technical and research reports and government publications may be borrowed from UBC (and elsewhere) via SFU's Interlibrary Loans facility.

MRM 670	Introduction to Forestry (5 credit hrs.)
MRM 671	Forest Ecology (5 credit hrs.)
MRM 672	Silviculture (5 credit hrs.)

Library material listed in Appendix C of each New Graduate Course Proposal Form is available at SFU.

Randall M. Peterman
for J.C. DAY

ah

2 June 1983

SIMON FRASER UNIVERSITY
New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Natural Resources Management Program Course Number: MRM 672
Title: Silviculture
Description: Principles and practice of silviculture; lecture and laboratory, with
added emphasis on the state of the art in British Columbia.
Credit Hours: 5 (five) Vector: 3-2-0 Prerequisite(s) if any: MRM 671
(Forest ecology), equivalent
course, or permission of
instructor.

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 5 - 10 When will the course first be offered: Spring 1984
How often will the course be offered: once each year

JUSTIFICATION:

Silviculture is the biological management of forests, concerned with the technical
details of maintaining and enhancing forest productivity and other values. A course
in silviculture is a basic need of a program in natural resource management, and is
particularly important in B.C.

RESOURCES:

Which Faculty member will normally teach the course: Neil Hendrickson
What are the budgetary implications of mounting the course: \$400 - \$500 for field trips

Are there sufficient Library resources (append details): may require limited acquisition
of texts, govt. publications and related materials,
Appended: a) Outline of the Course and use of UBC forestry library.
b) An indication of the competence of the Faculty member to give the course.
c) Library resources

Approved: Departmental Graduate Studies Committee: G.C. Day Randall H. Peterson Date: 31/05/83
Faculty Graduate Studies Committee: S. V. ... Date: 2 June 1983
Faculty: _____ Date: _____
Senate Graduate Studies Committee: Andrew ... Date: June 20/83
Senate: _____ Date: _____

APPENDIX A

COURSE OUTLINE

SILVICULTURE

Lectures cover the three major areas of silviculture: methods of reproduction, intermediate treatments, and protection. Will discuss role of cutting and its effects, the relationship of silviculture with utilization and forest management and economics. The application of silviculture in different regions will be reviewed, with emphasis on B.C. Field trips will be taken to the UBC Research Forest, Tree Farm Licenses, and other areas of interest.

APPENDIX B

Course Instructor

This course will be taught by Neil Hendrickson (MRM), whose experience and degrees are in forestry (BS), forest resources/silviculture (MS), and forest ecology/silviculture (Ph.D. candidate).

Personnel from the B.C. Ministry of Forests, the UBC Research Forest, and from the forest industry may be involved in the course as guest lecturers and as tour guides for field trips.

APPENDIX C

Library Resources

- Assmann, E. 1970. The principles of forest yield study. Pergamon Press, Toronto. 506 pp.
- Barrett, J.W., ed. 1980. Regional silviculture of the United States. Second edition. John Wiley & Sons, Toronto. 551 pp.
- Canadian Forestry Association. 1977. Proceedings national forest regeneration conference. (No further information given.)
- Cannell, M.G.R., and F.T. Last, eds. 1979. Tree physiology and yield improvement. Academic Press, Toronto.
- Conway, S. 1976. Logging practices: principles of timber harvesting systems. Miller Freeman. 416 pp.
- Daniel, T.W., J.A. Helms, and F.S. Baker. 1979. Principles of silviculture. Second edition. McGraw-Hill, Toronto. 500 pp.
- Hermann, R.K., and D.P. Lavender, eds. 1972. Even-age management. Paper 848. Oregon State University. 250 pp.
- Hewett, C.E., and T.E. Hamilton, eds. 1982. Forests in demand - conflicts and solutions. Auburn House, Boston. 265 pp.
- Hocker, H.W., Jr. 1979. Introduction to forest biology. John Wiley and Sons, Toronto. 467 pp.
- Kostler, J. 1956. Silviculture. Oliver and Boyd, London. 416 pp.
- Krajina, V.J. 1965. Biogeoclimatic zones and bioecoceneses of British Columbia. UBC Faculty of Forestry. 131 pp.
- Krajina, V.J. 1969. Ecology of forest trees of British Columbia. Ecology Western North America 2: 1-146.
- Krajina, V.J., K. Klinka, and J. Worrall. 1982. Distribution and ecological characteristics of trees and shrubs of British Columbia. UBC Faculty of Forestry. 131 pp.
- Means, J.E., ed. 1982. Forest succession and stand development research in the northwest. Proceedings of the symposium held 26 March 1981. Forest research lab., Oregon State University, Corvallis. 170 pp.
- Smith, D.M. 1962. The practice of silviculture. Seventh edition. John Wiley & Sons, Toronto. 578 pp.

- Society of American Foresters. 1981. Choices in silviculture for American forests. Society of American Forests, Washington, D.C. 80 pp.
- Spurr, S.H., and B.V. Barnes. 1980. Forest ecology. Third edition. John Wiley & Sons, Toronto. 687 pp.
- Stern, Klaus, and Laurence Rocke. 1974. Genetics of forest ecosystems. Springer-Verlag, New York.
- Stoddard, C.H. 1978. Essentials of forestry practice. Third edition. John Wiley & Sons, Toronto. 387 pp.
- Troup, R.S. 1966. Silvicultural systems. Second edition. Clarendon Press, Oxford. 216 pp.
- U.S. Forest Service 1979. Silvicultural systems for the major forest types of the United States. USDA Forest Service Agriculture handbook. 445. 114 pp.
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- Wilde, S.A. 1958. Forest soils: their properties and relation to silviculture. Ronald Press, New York.
- Young, R.A. ed. 1982. Introduction to forest science. John Wiley & Sons, Toronto. 554 pp.

Journals which may contain papers on various aspects of forestry.

Journal of Forestry
Forest Science
Forest Ecology and Management
International Review of Forestry Research
Canadian Journal of Forestry Research
Forestry Chronicle
Forestalk

Publications from

B.C. Ministry of Forests
Canadian Forest Service
U.S. Forest Service